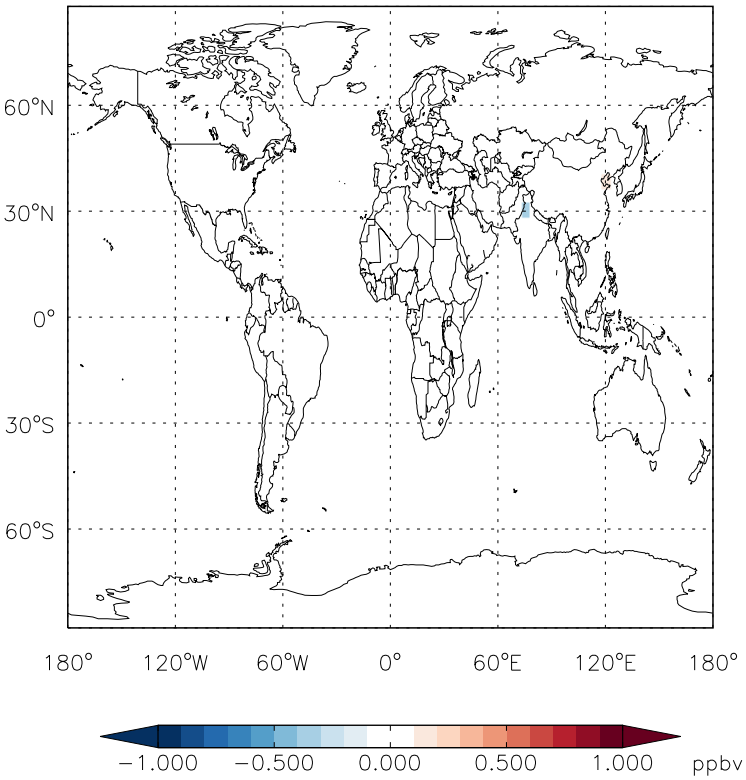
GEOS−Chem Difference Maps at surface and 500 hPa

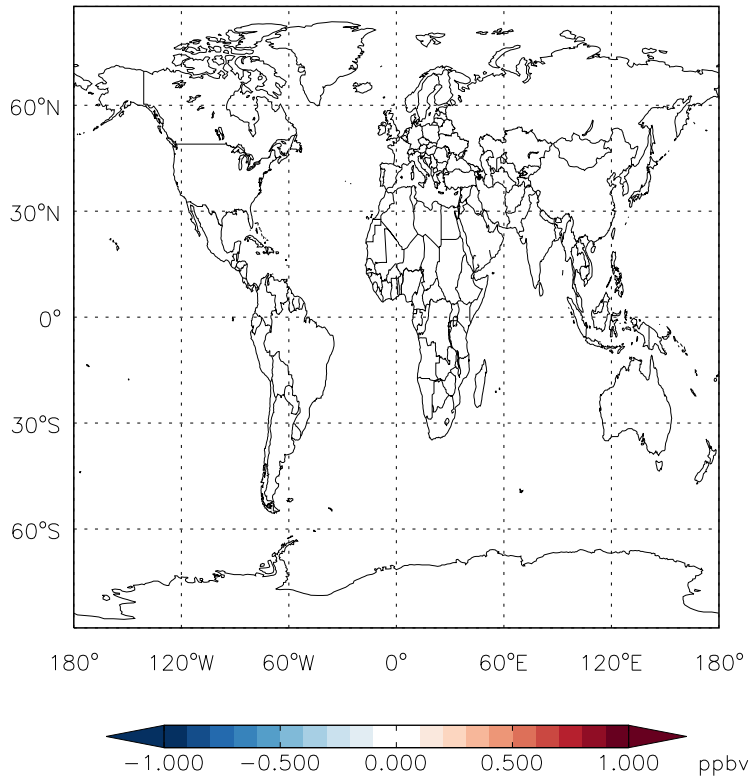
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NO − Diff @ Surface for Jul



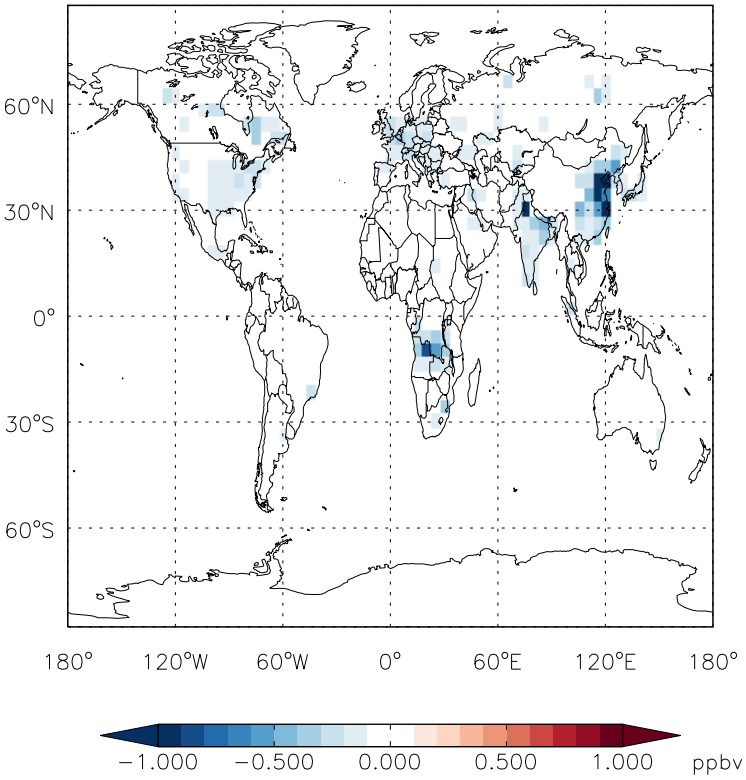
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NO− Diff @ 500 hPa for Jul



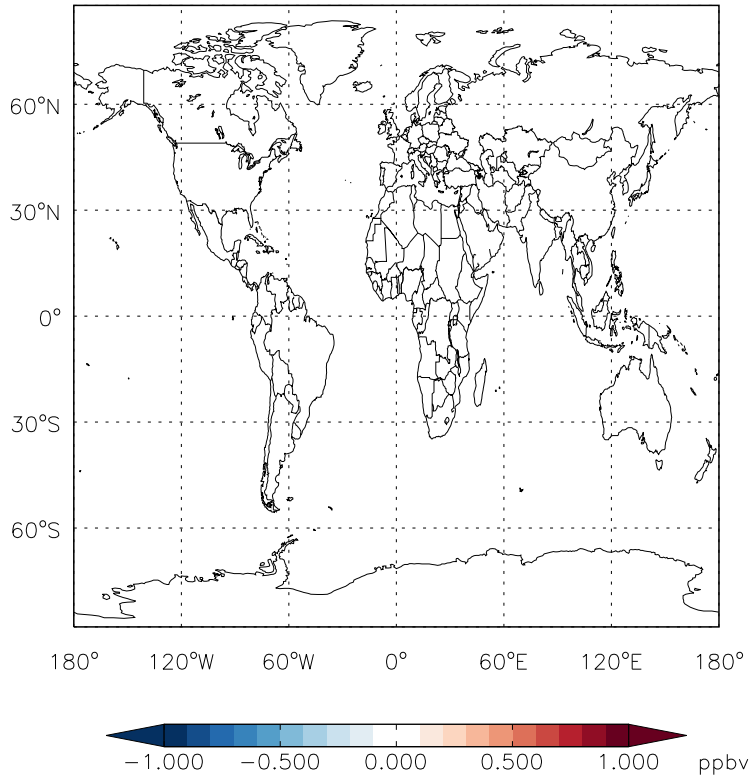
v11−01f−merra2−Run0 − v11−01d−Run1

NO − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

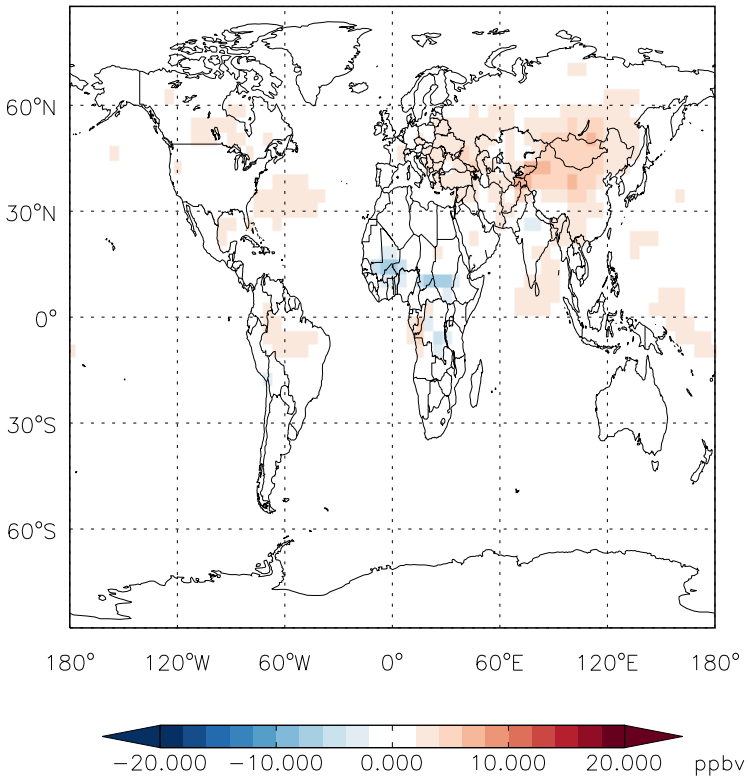
NO− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

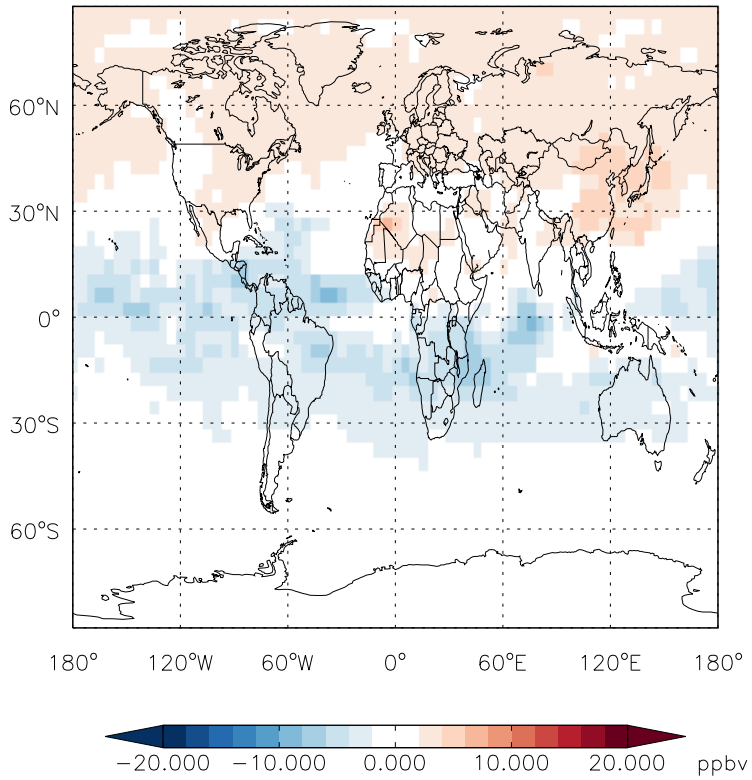
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

O3 − Diff @ Surface for Jul



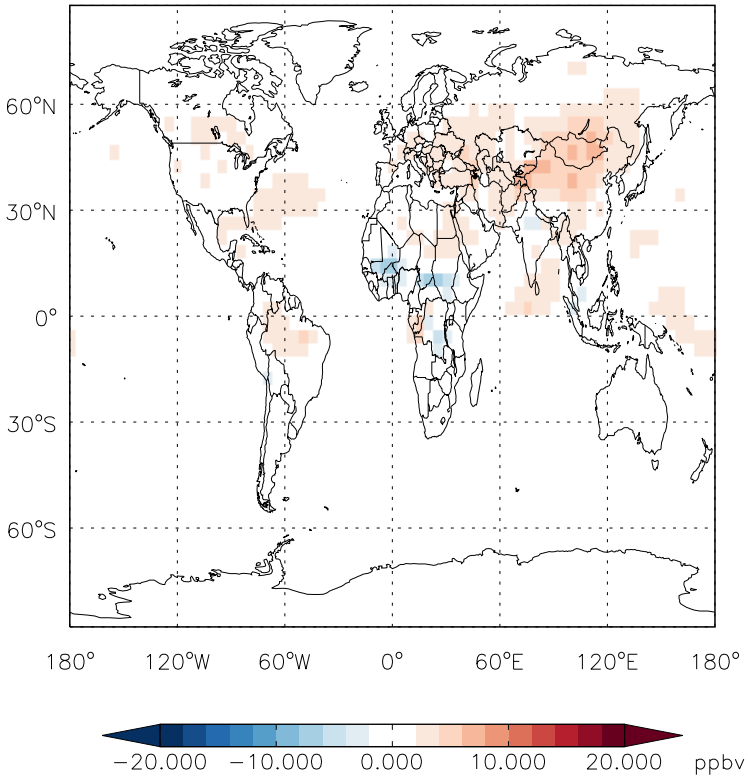
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

O3− Diff @ 500 hPa for Jul



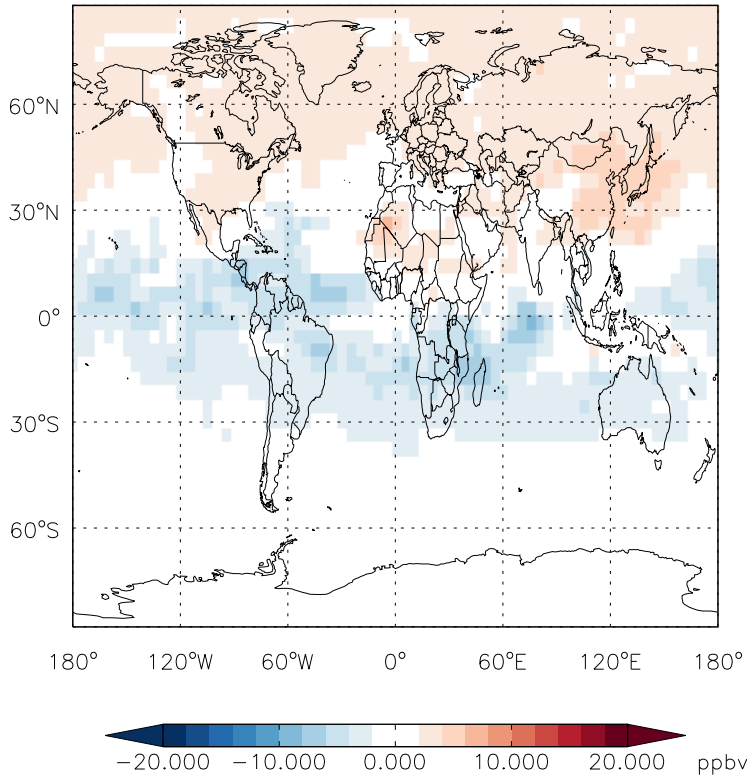
v11−01f−merra2−Run0 − v11−01d−Run1

O3 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

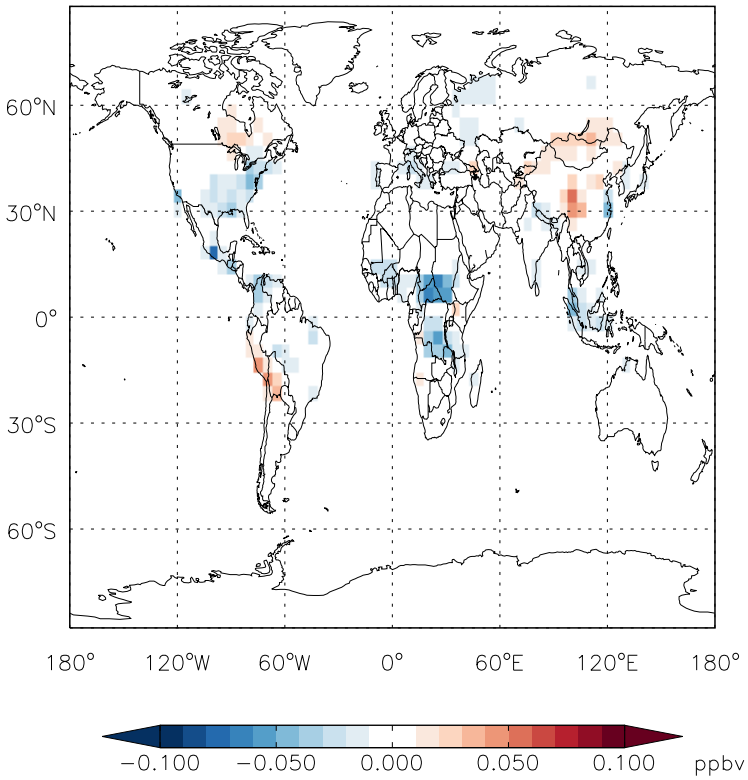
O3− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

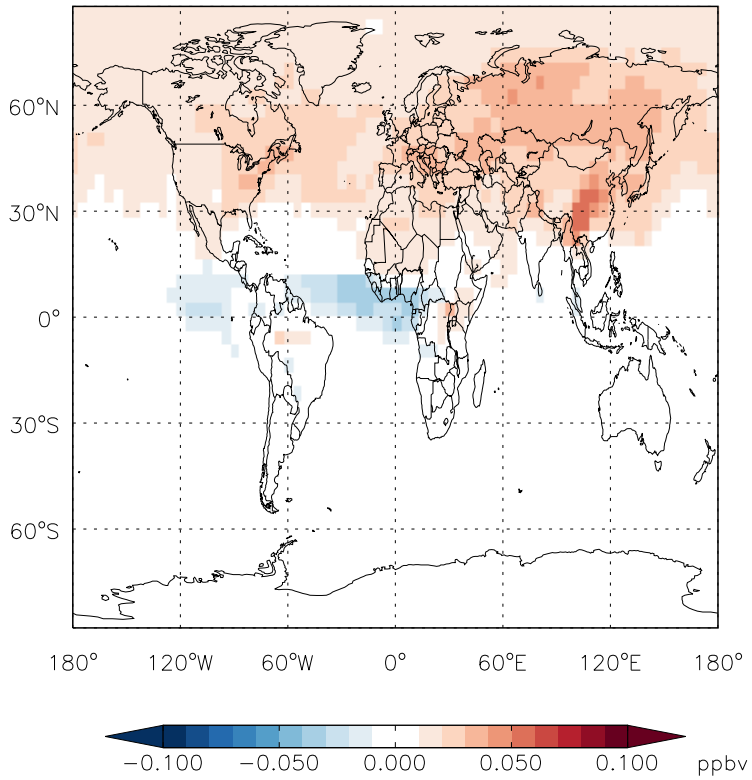
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

PAN − Diff @ Surface for Jul



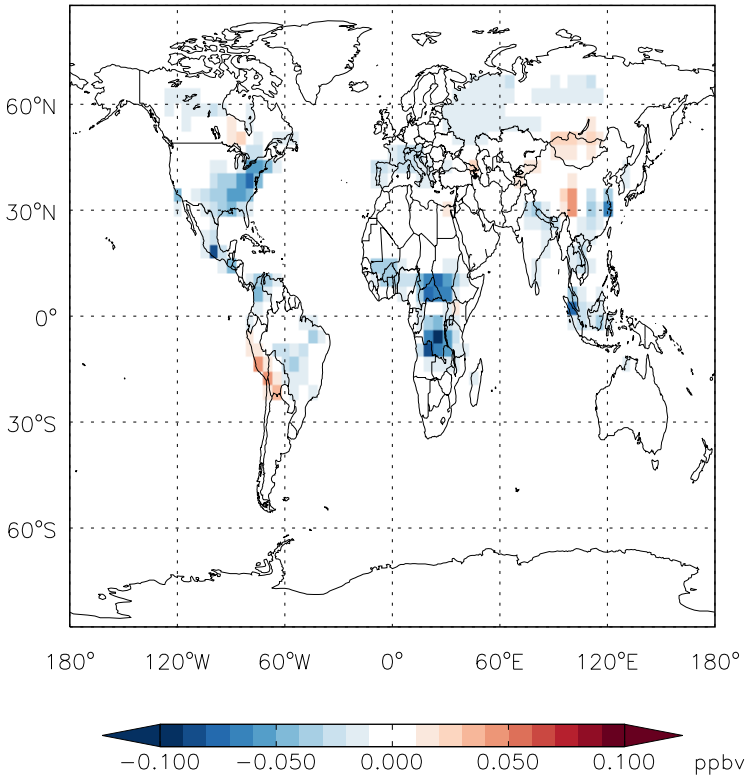
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

PAN− Diff @ 500 hPa for Jul



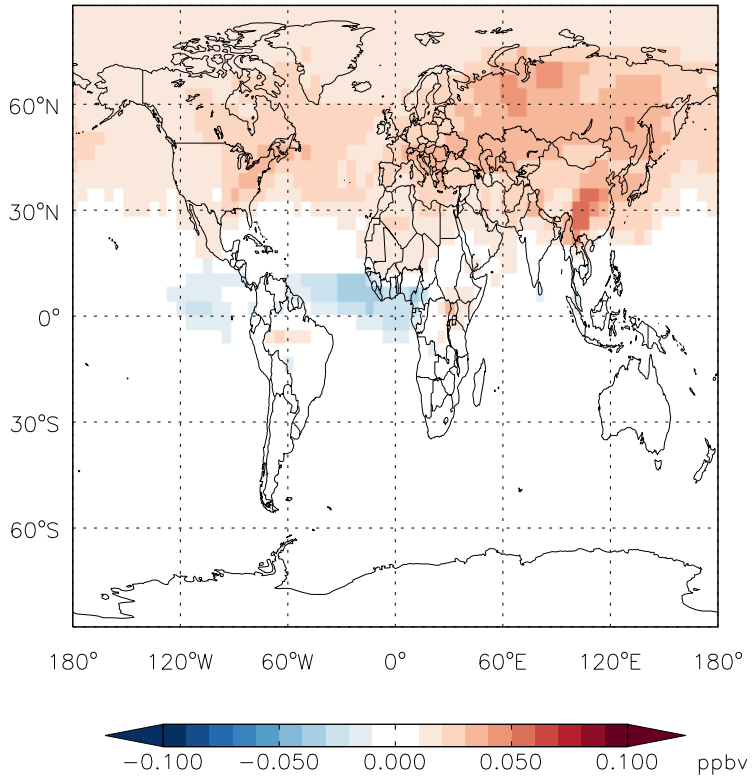
v11−01f−merra2−Run0 − v11−01d−Run1

PAN − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

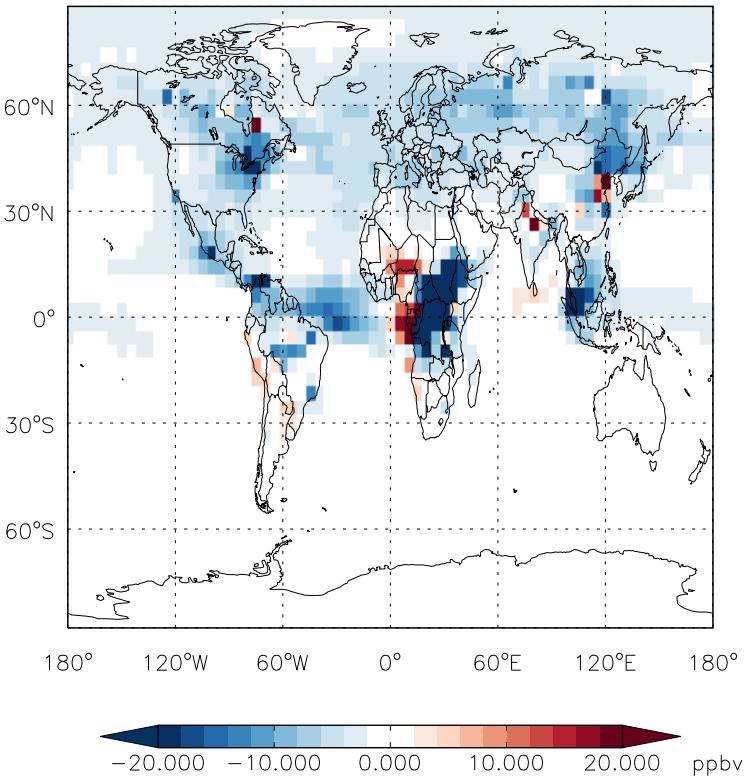
PAN− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

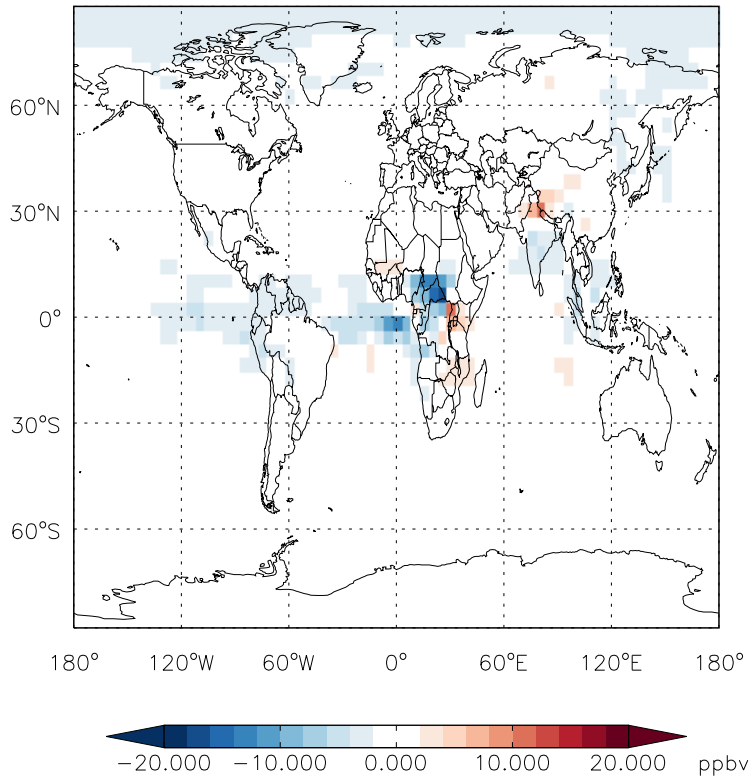
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CO - Diff @ Surface for Jul



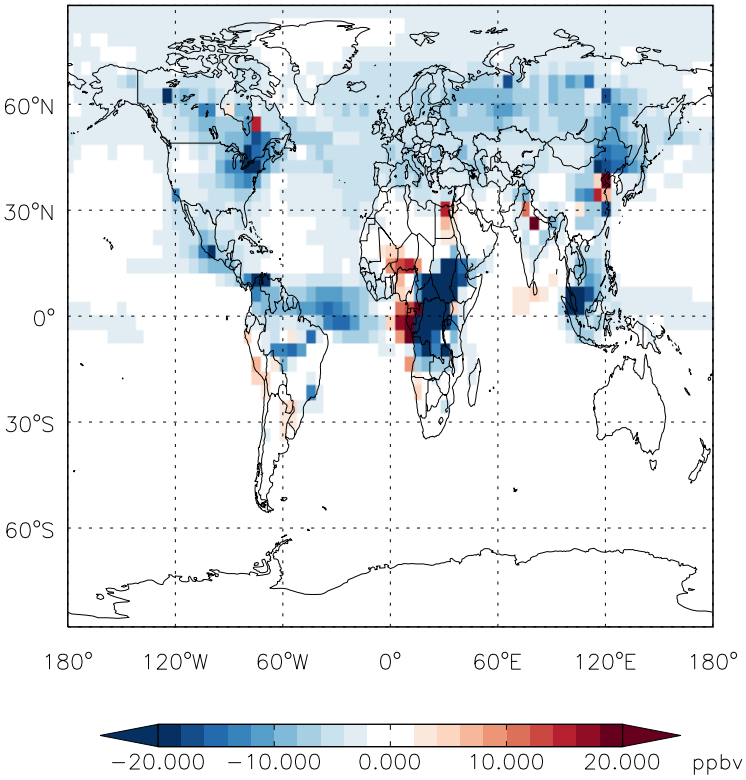
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CO- Diff @ 500 hPa for Jul



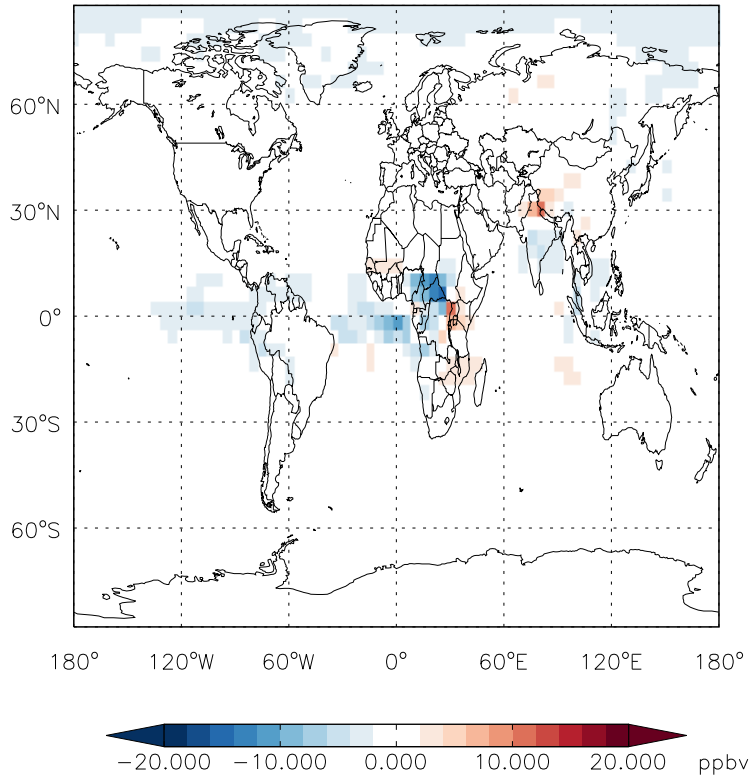
v11-01f-merra2-Run0 - v11-01d-Run1

CO - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

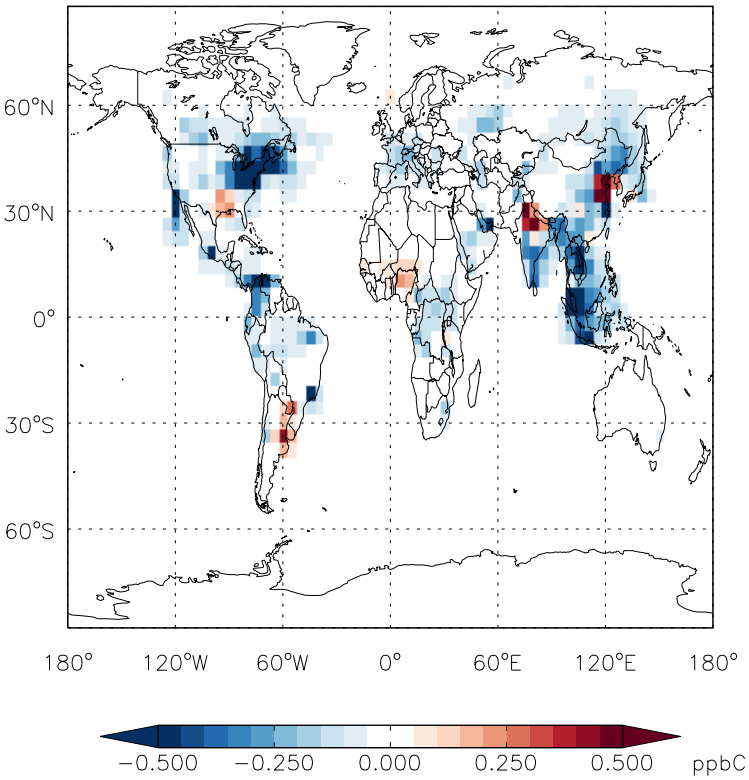
CO- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

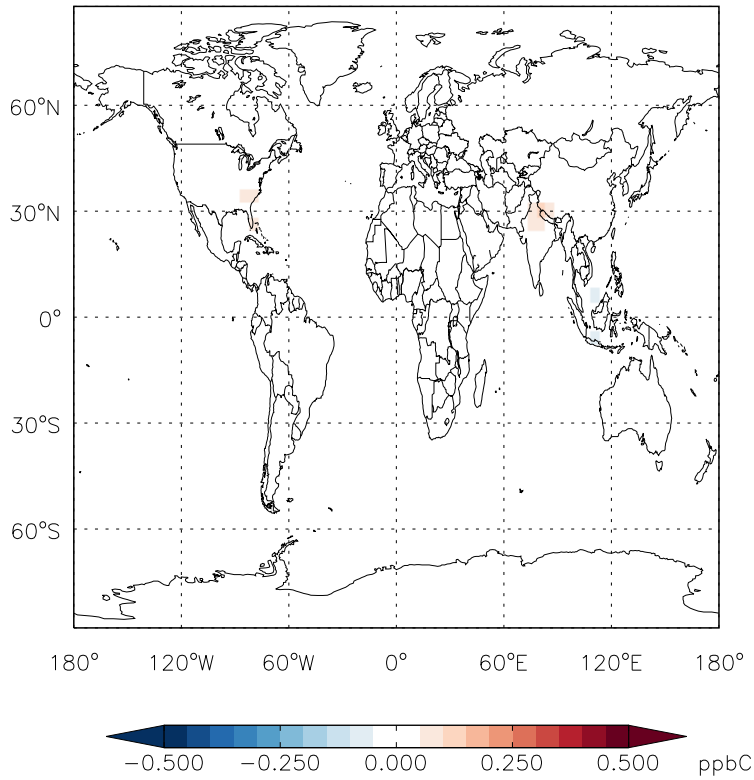
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

ALK4 − Diff @ Surface for Jul



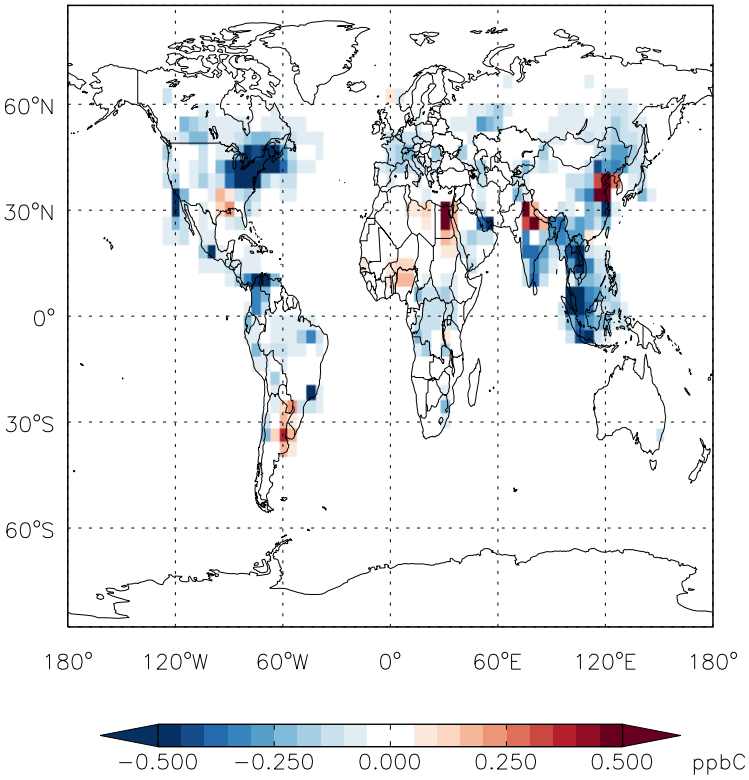
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

ALK4− Diff @ 500 hPa for Jul



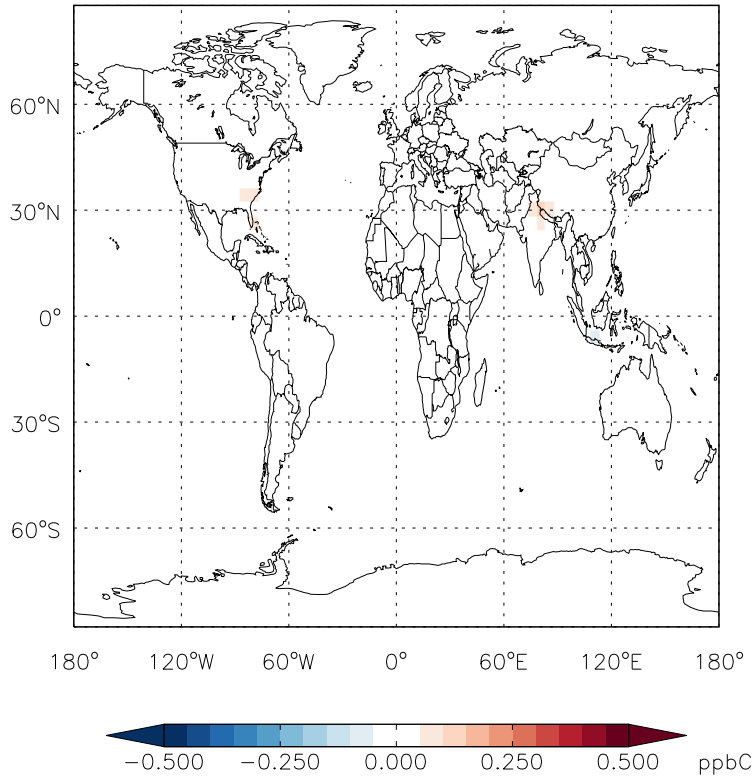
v11−01f−merra2−Run0 − v11−01d−Run1

ALK4 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

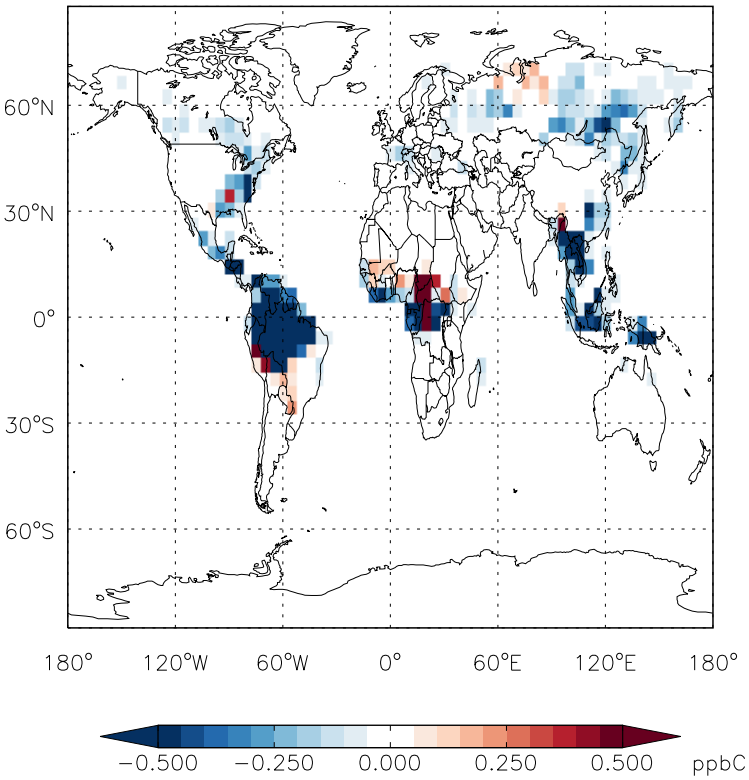
ALK4− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

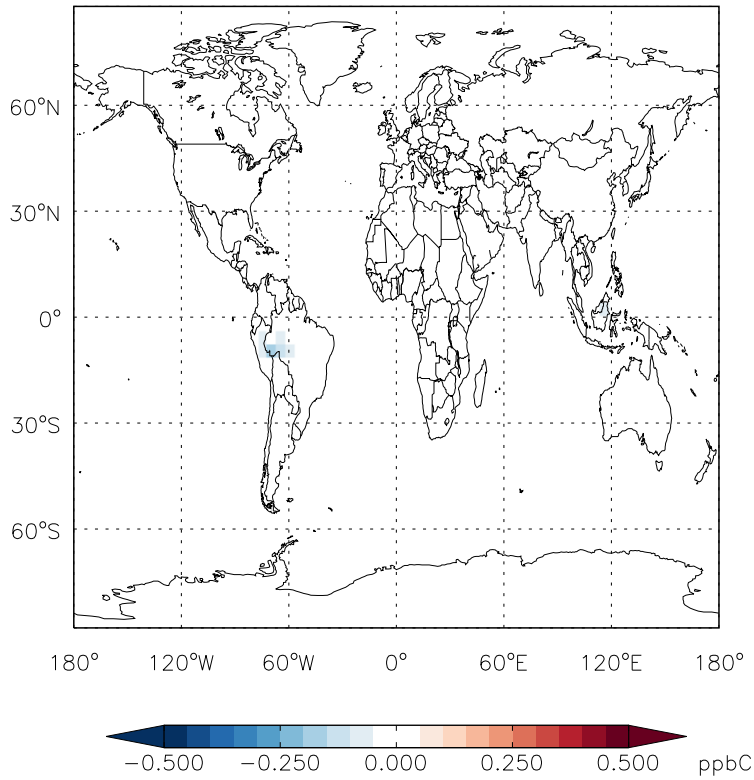
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

ISOP − Diff @ Surface for Jul



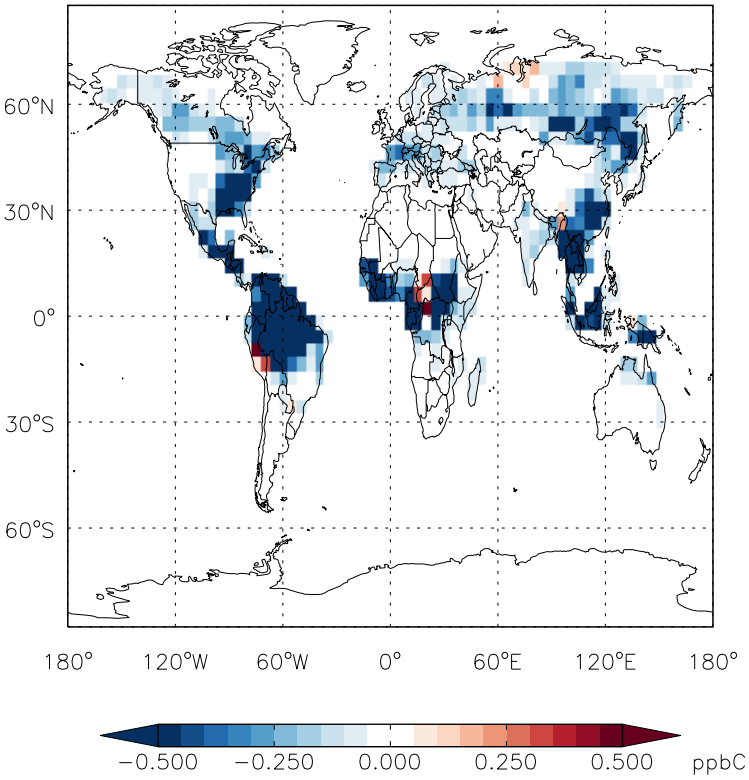
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

ISOP− Diff @ 500 hPa for Jul



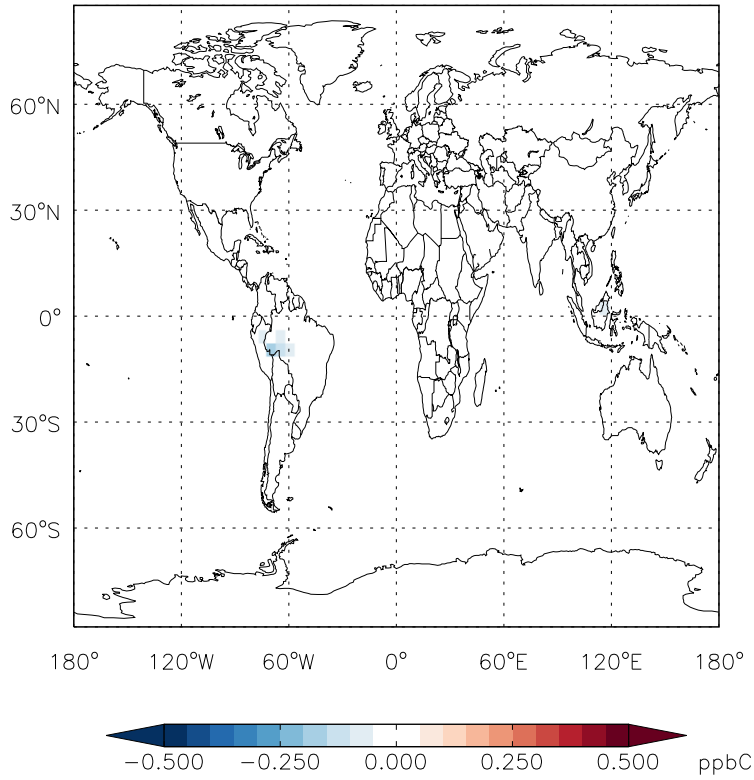
v11−01f−merra2−Run0 − v11−01d−Run1

ISOP − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

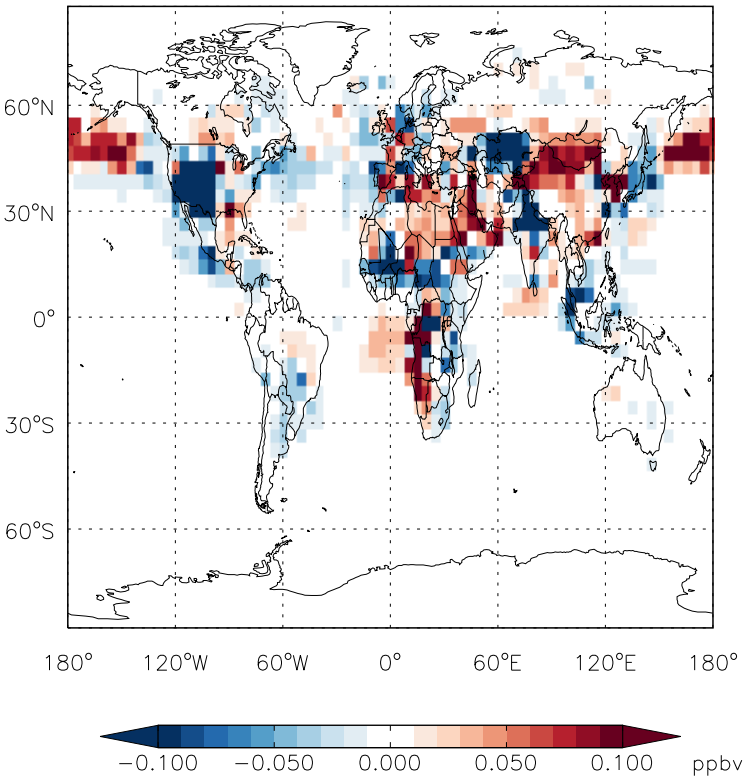
ISOP− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

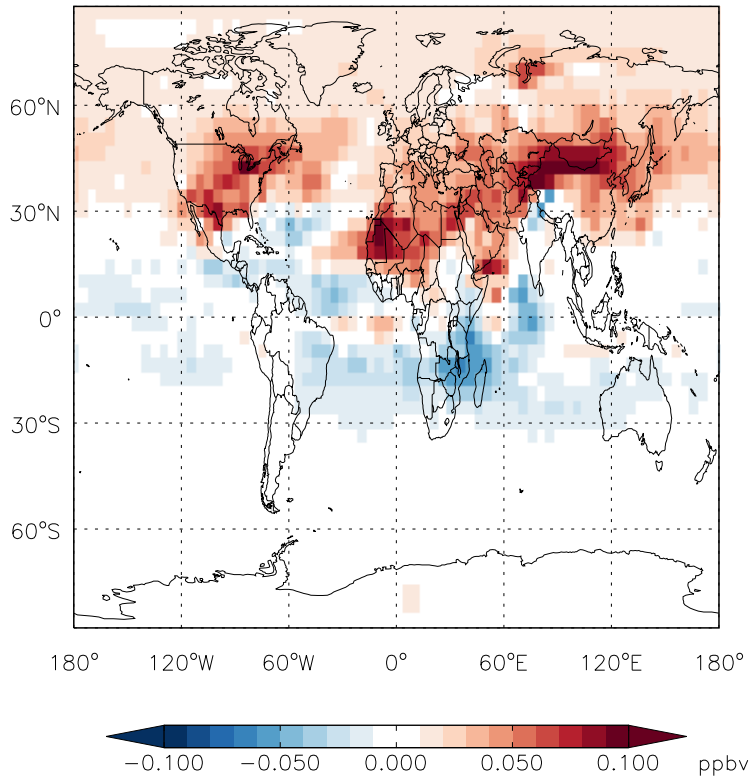
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HNO3 - Diff @ Surface for Jul



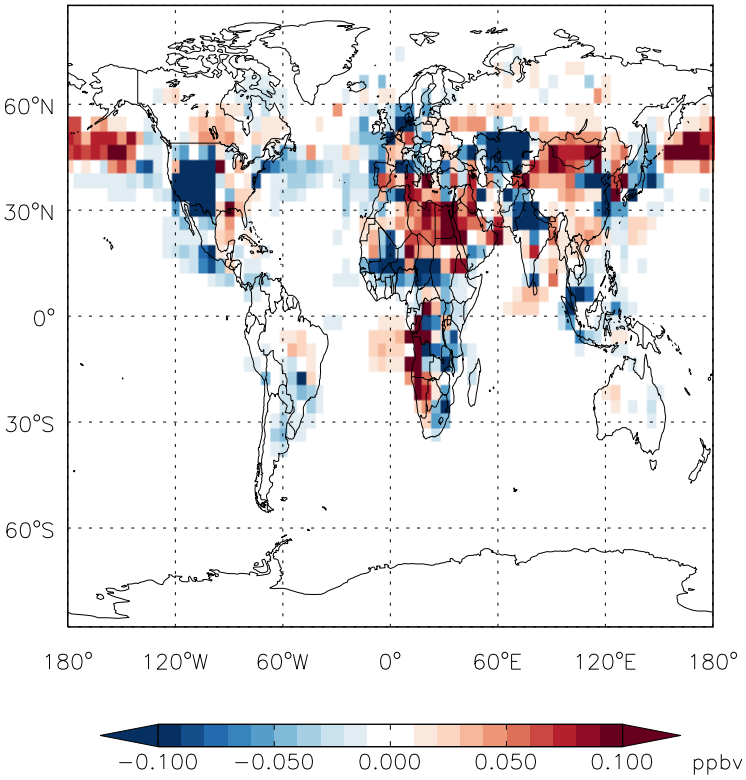
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HNO3- Diff @ 500 hPa for Jul



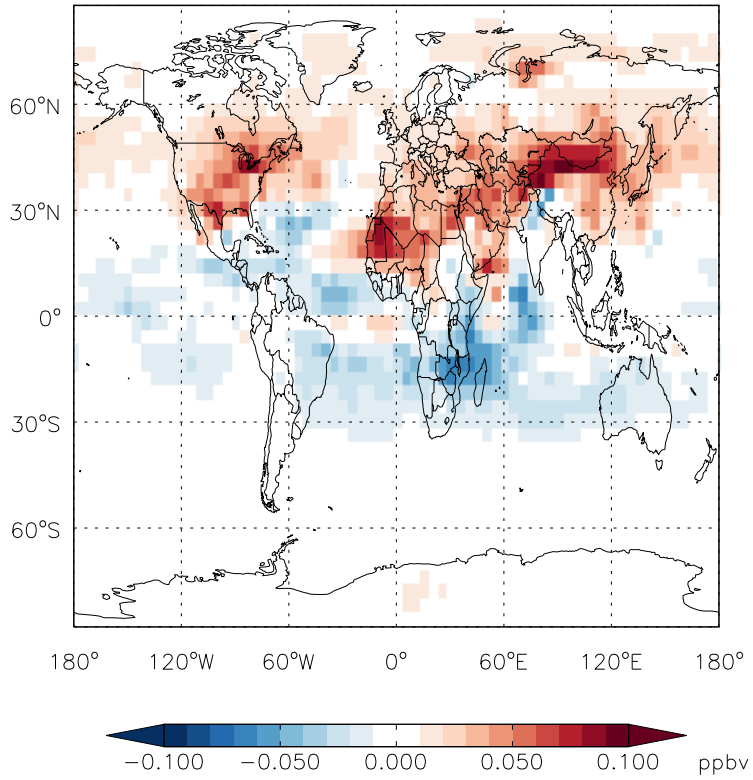
v11-01f-merra2-Run0 - v11-01d-Run1

HNO3 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

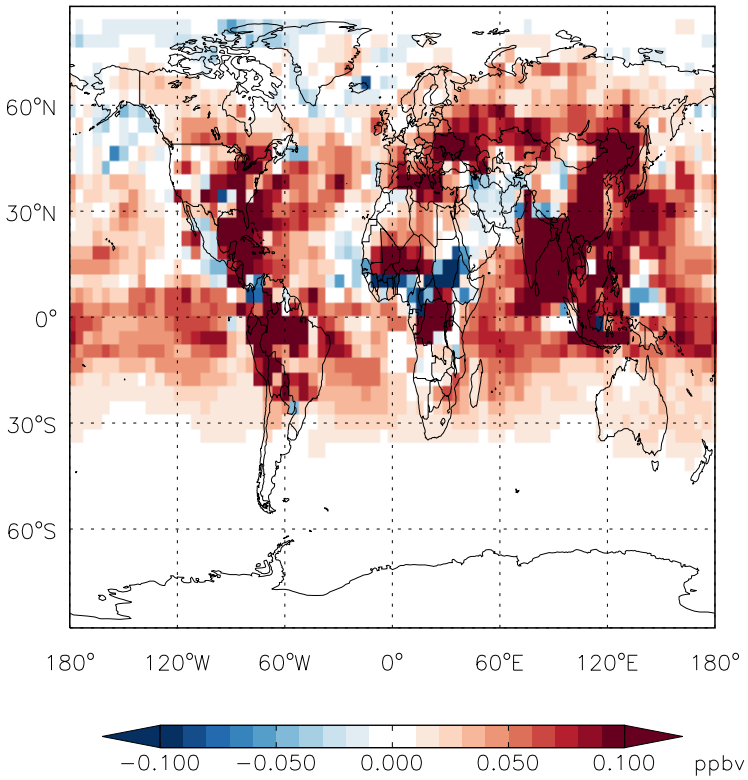
HNO3- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

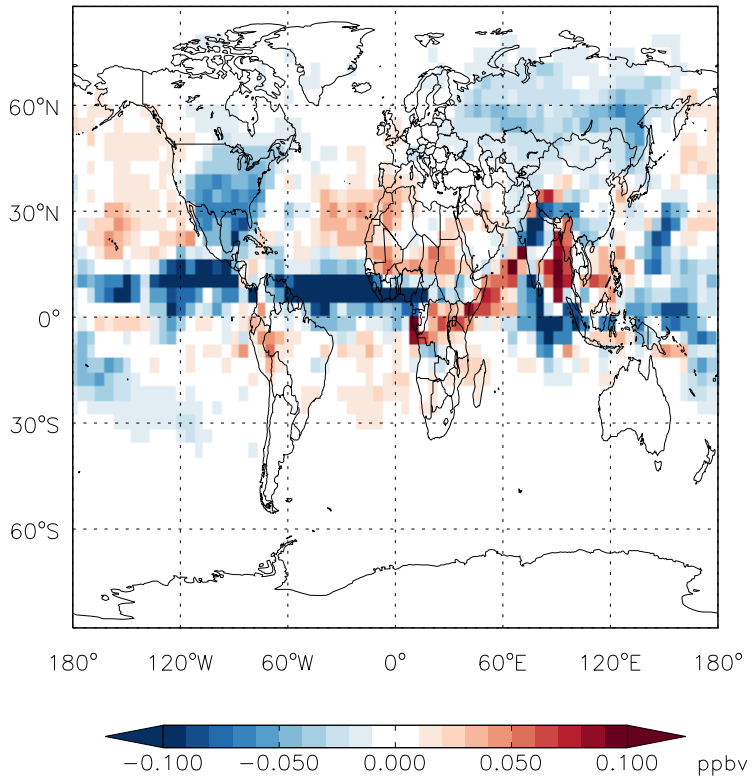
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H2O2 - Diff @ Surface for Jul



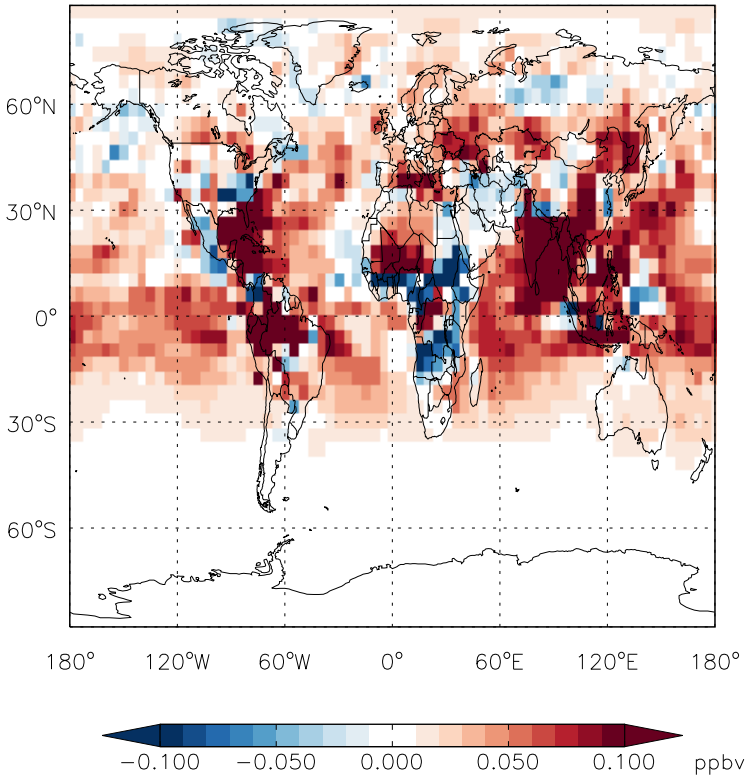
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H2O2- Diff @ 500 hPa for Jul



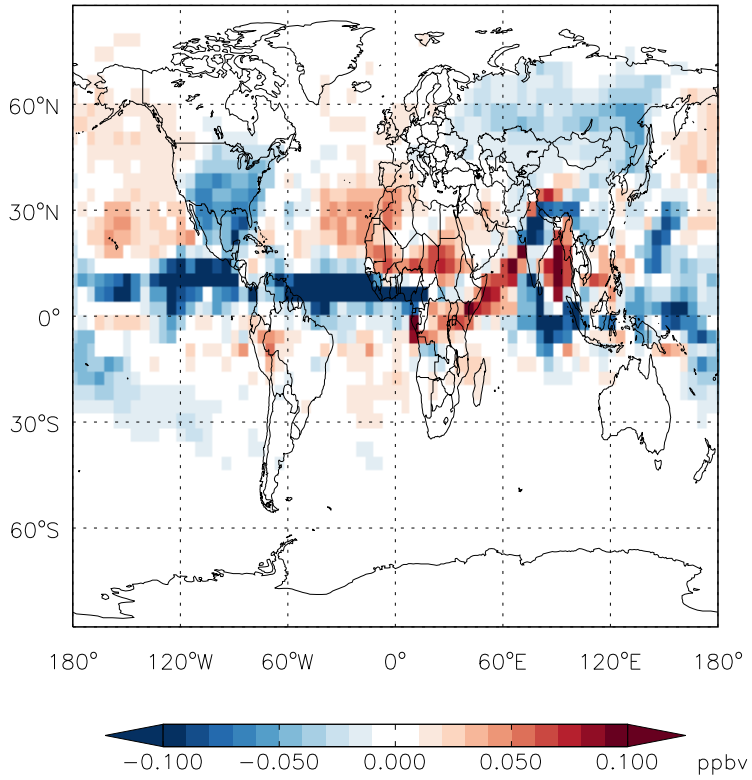
v11-01f-merra2-Run0 - v11-01d-Run1

H2O2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

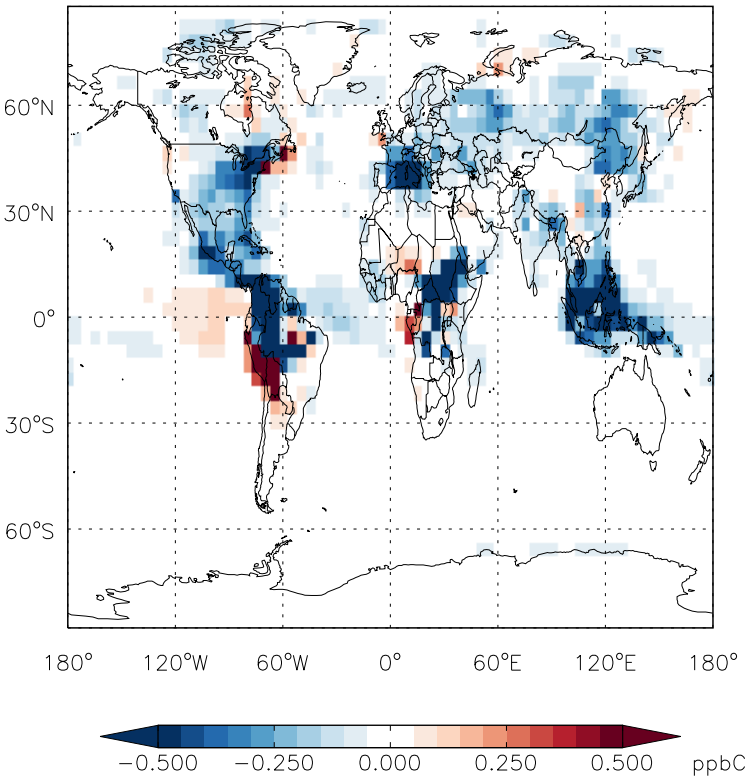
H2O2- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

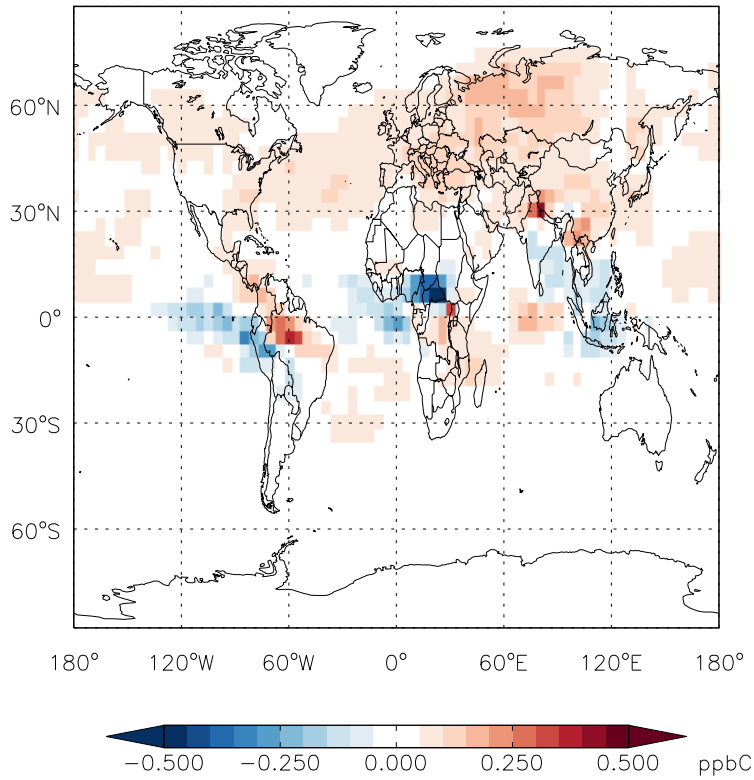
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

ACET − Diff @ Surface for Jul



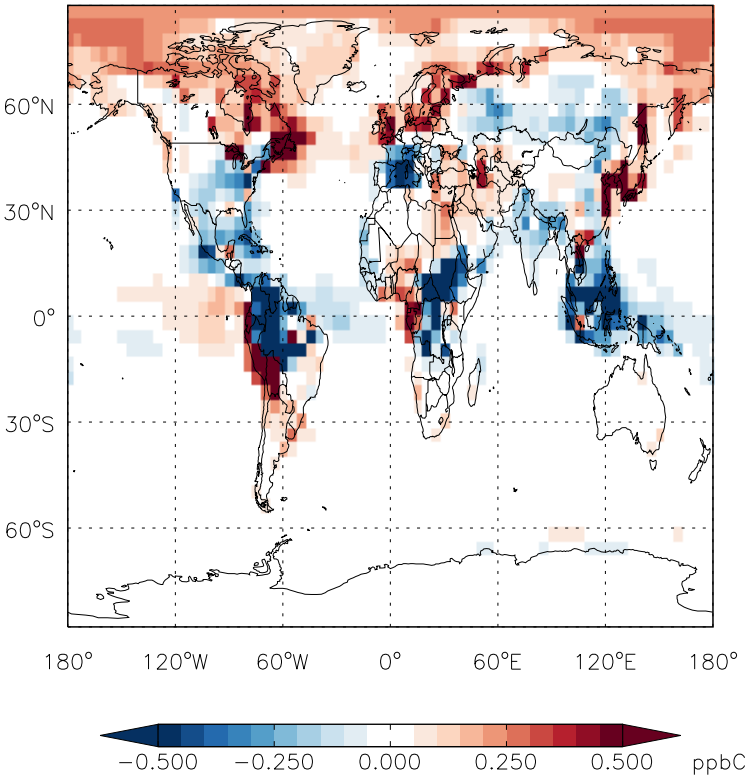
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

ACET− Diff @ 500 hPa for Jul



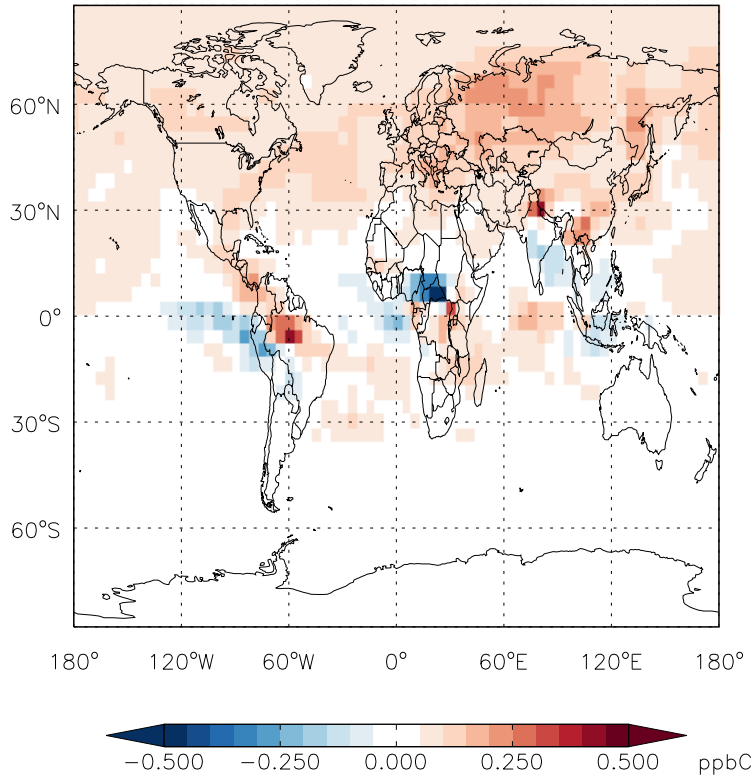
v11−01f−merra2−Run0 − v11−01d−Run1

ACET − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

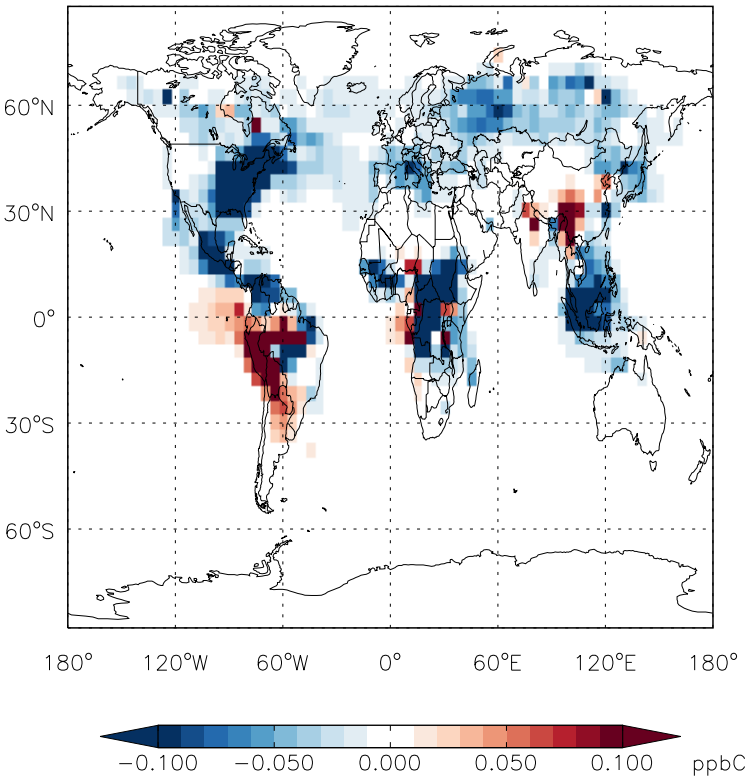
ACET− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

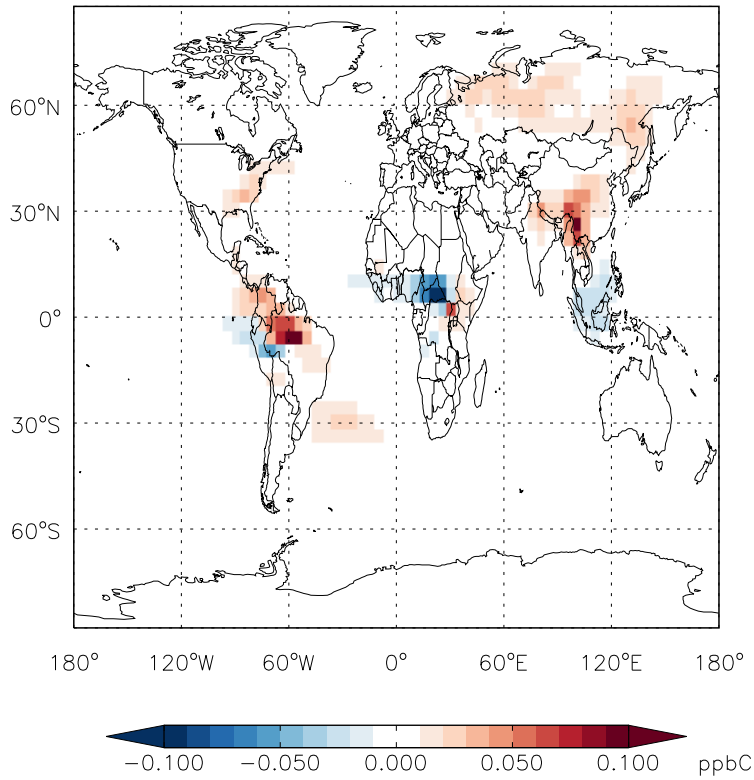
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MEK − Diff @ Surface for Jul



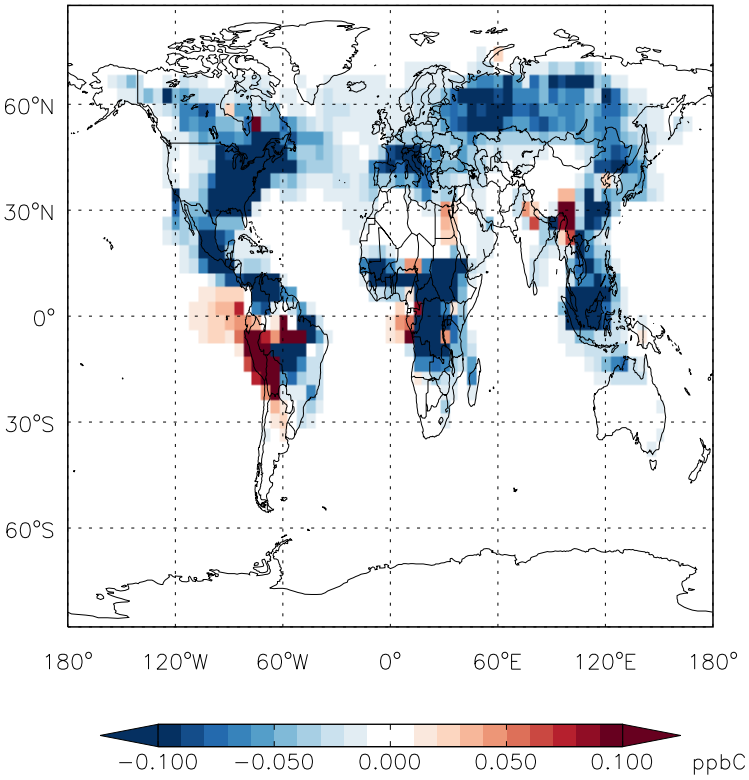
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MEK− Diff @ 500 hPa for Jul



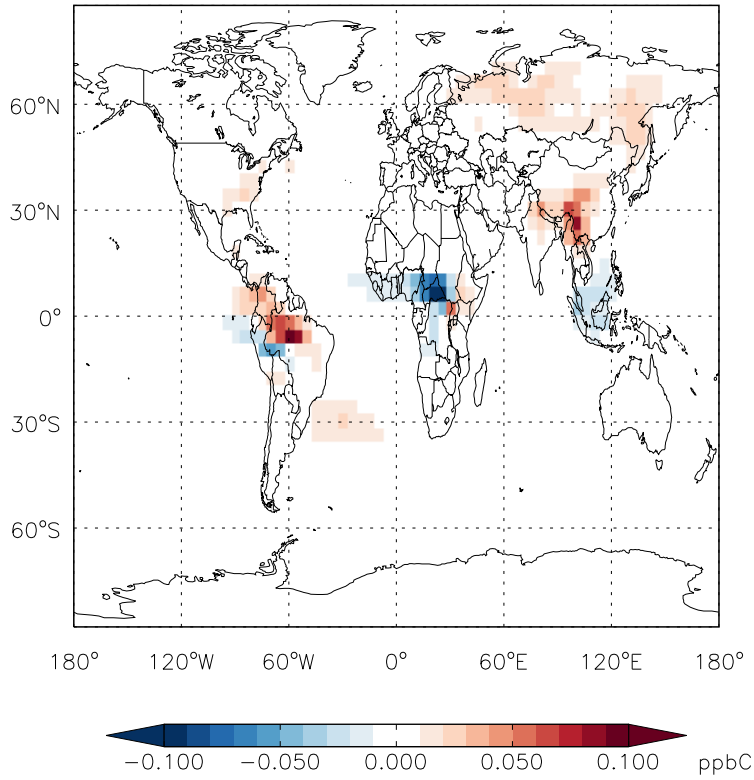
v11−01f−merra2−Run0 − v11−01d−Run1

MEK − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

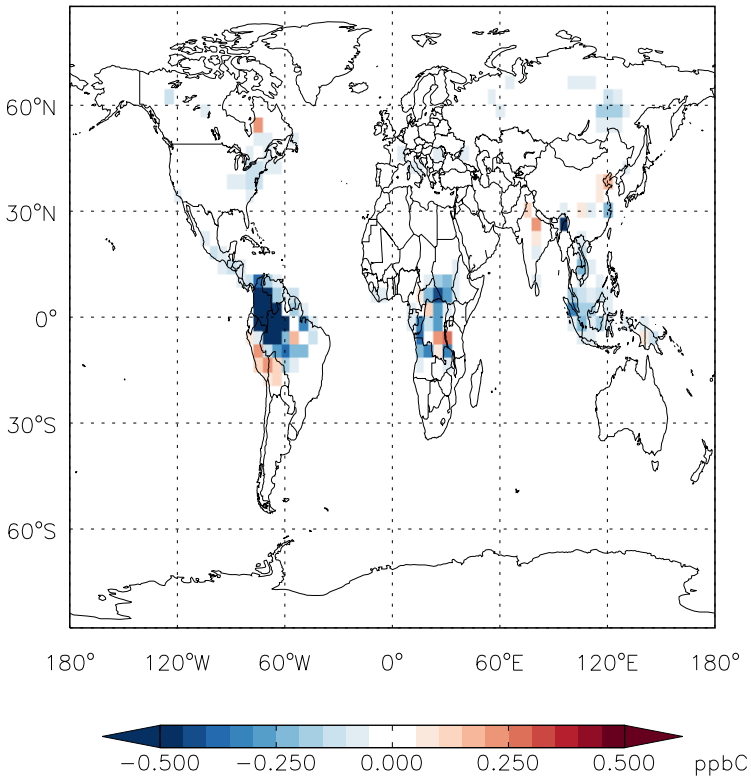
MEK− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

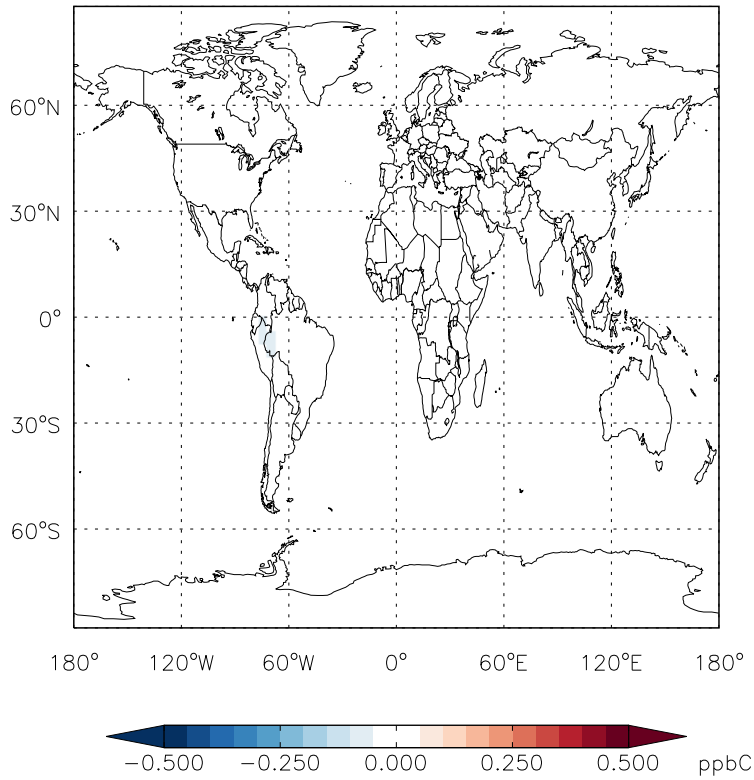
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ALD2 - Diff @ Surface for Jul



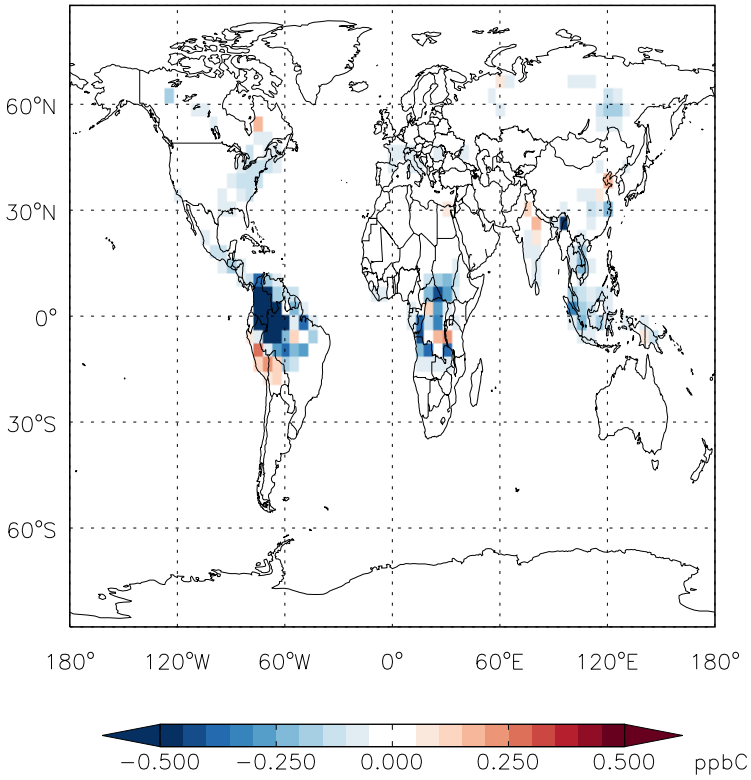
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ALD2- Diff @ 500 hPa for Jul



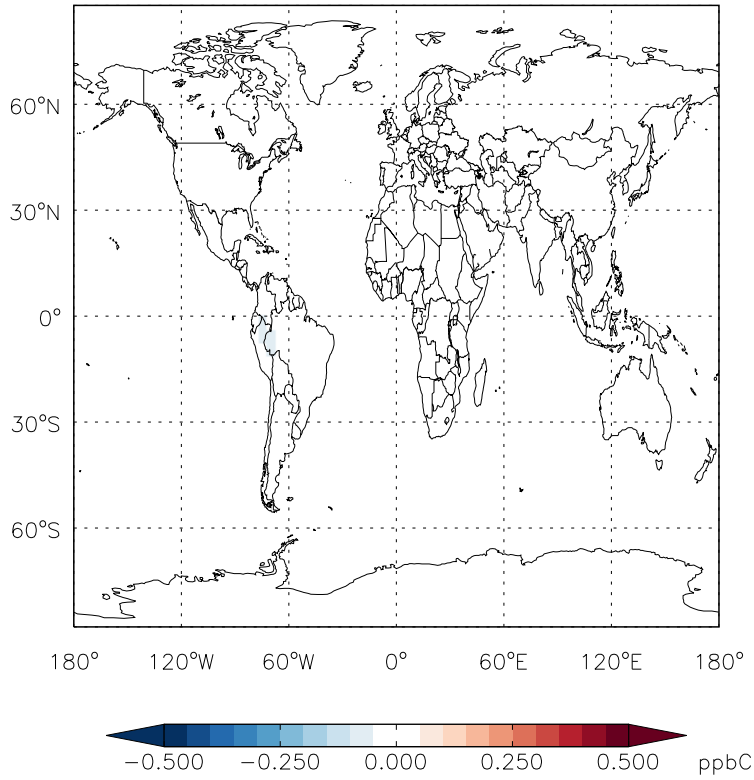
v11-01f-merra2-Run0 - v11-01d-Run1

ALD2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

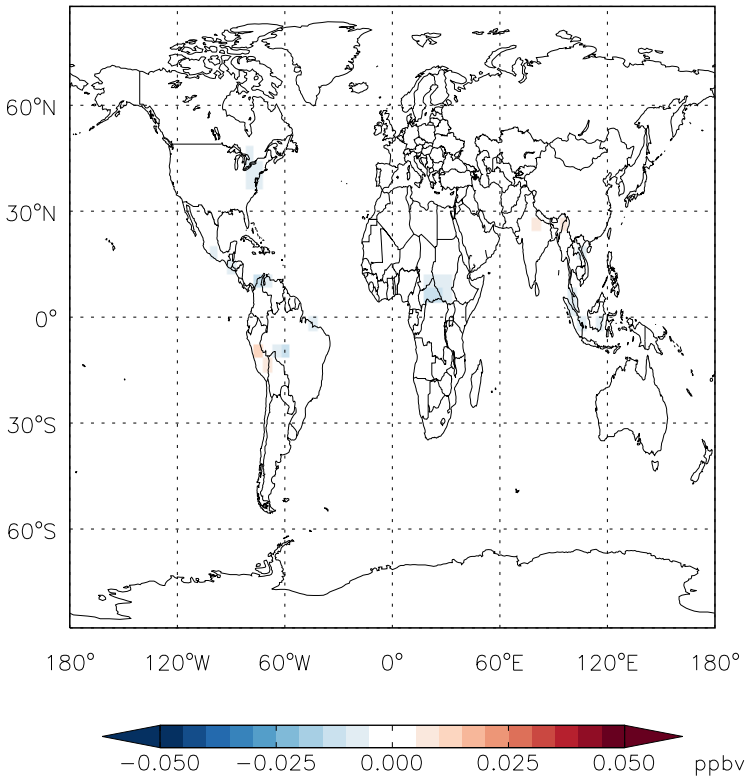
ALD2- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

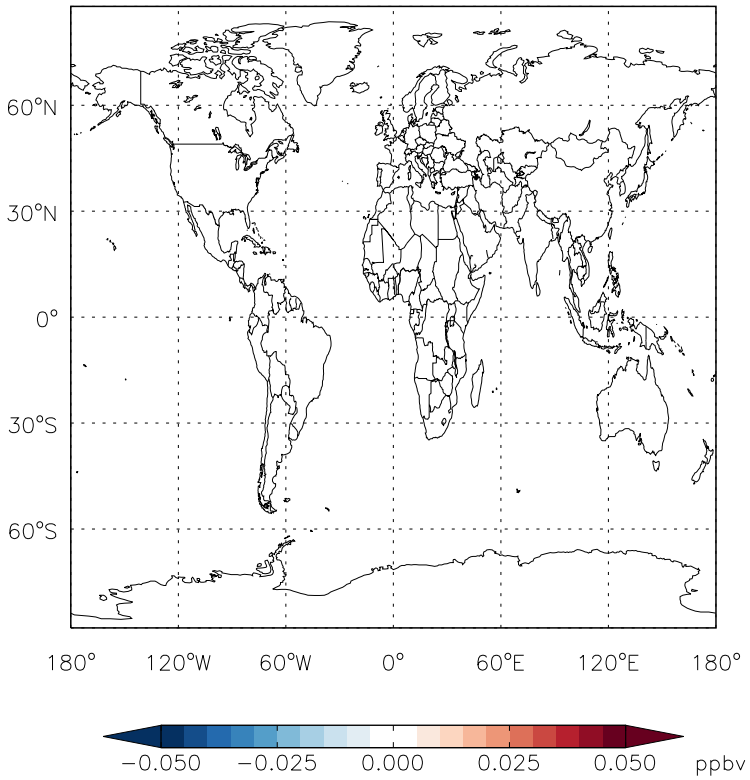
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

RCHO - Diff @ Surface for Jul



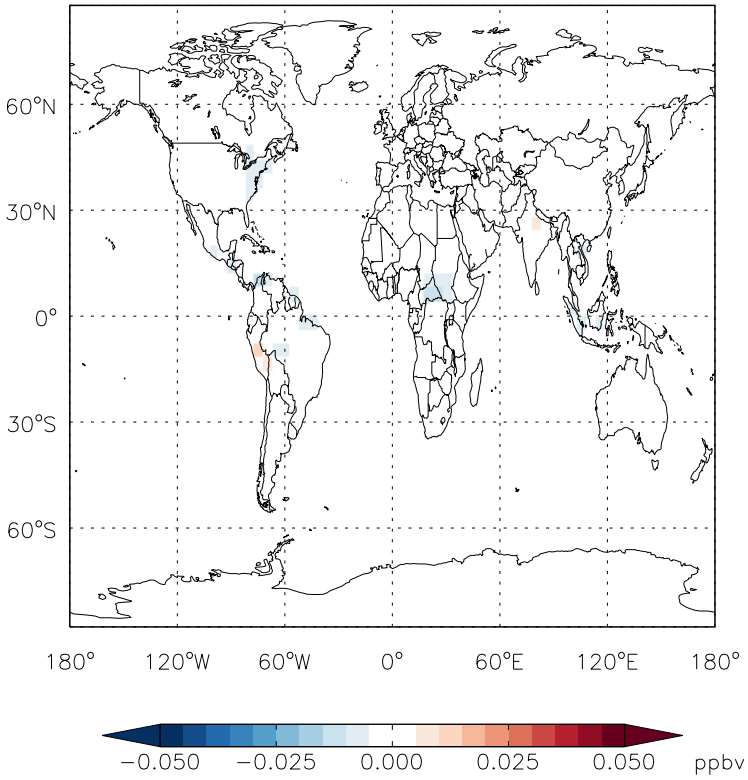
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

RCHO- Diff @ 500 hPa for Jul



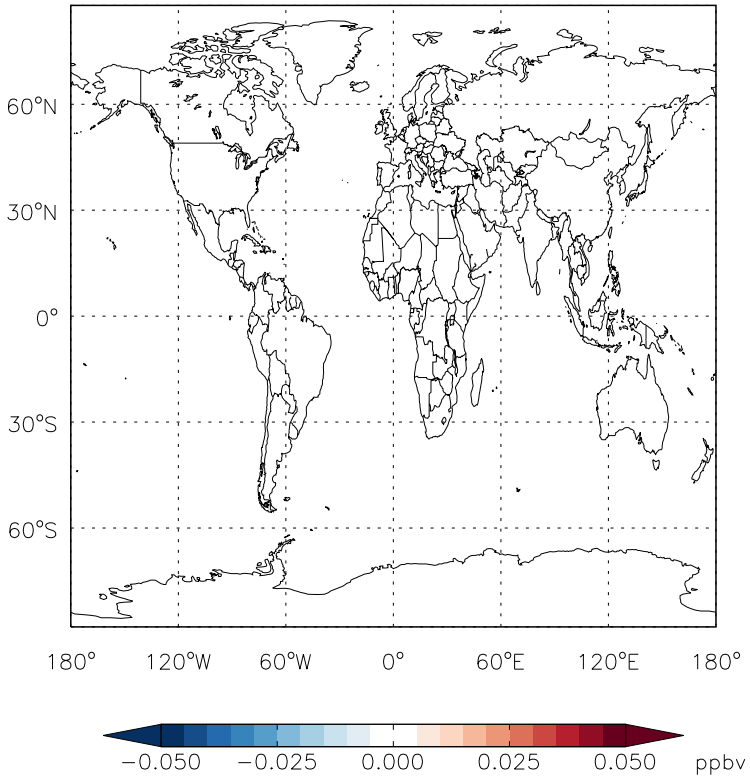
v11-01f-merra2-Run0 - v11-01d-Run1

RCHO - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

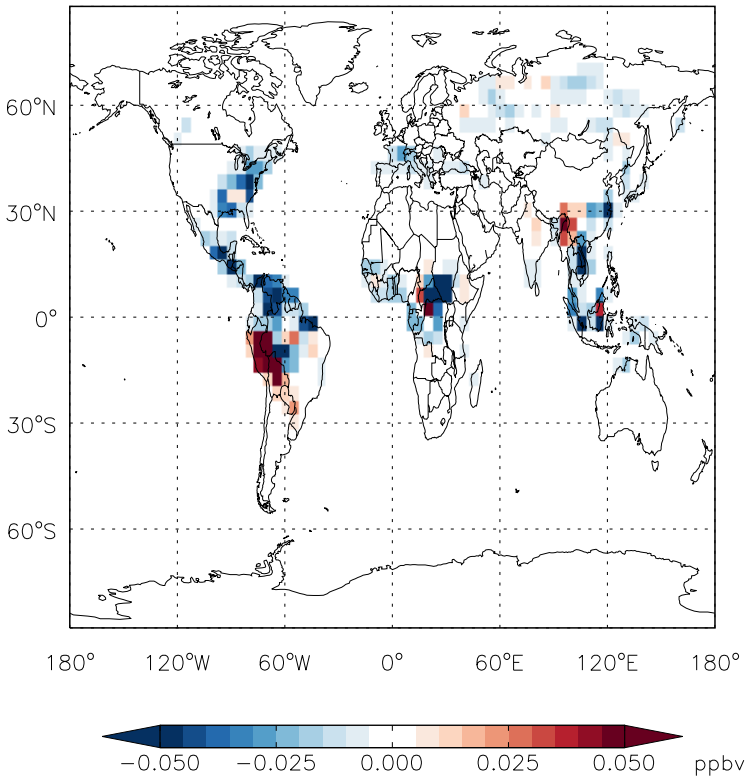
RCHO- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

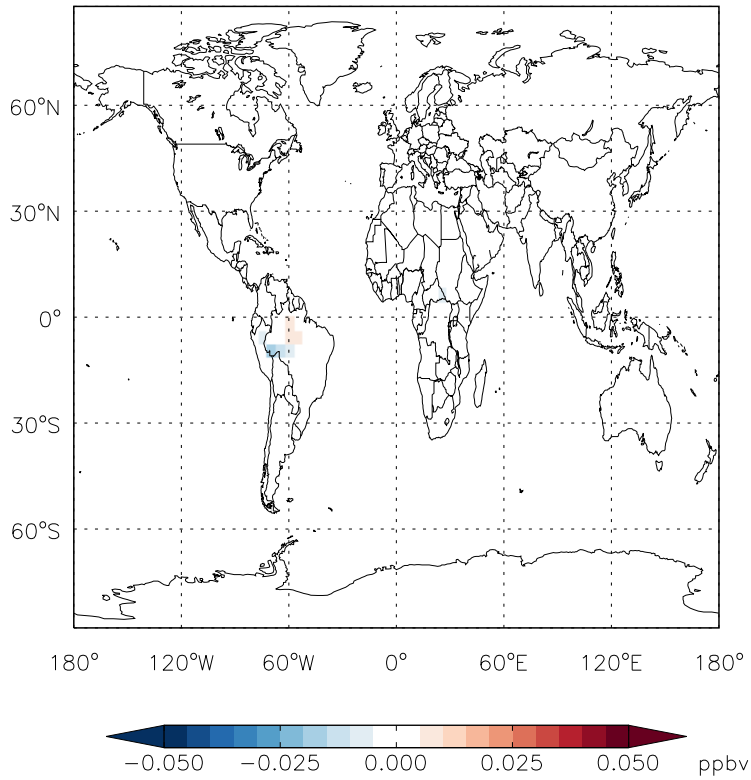
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MVK - Diff @ Surface for Jul



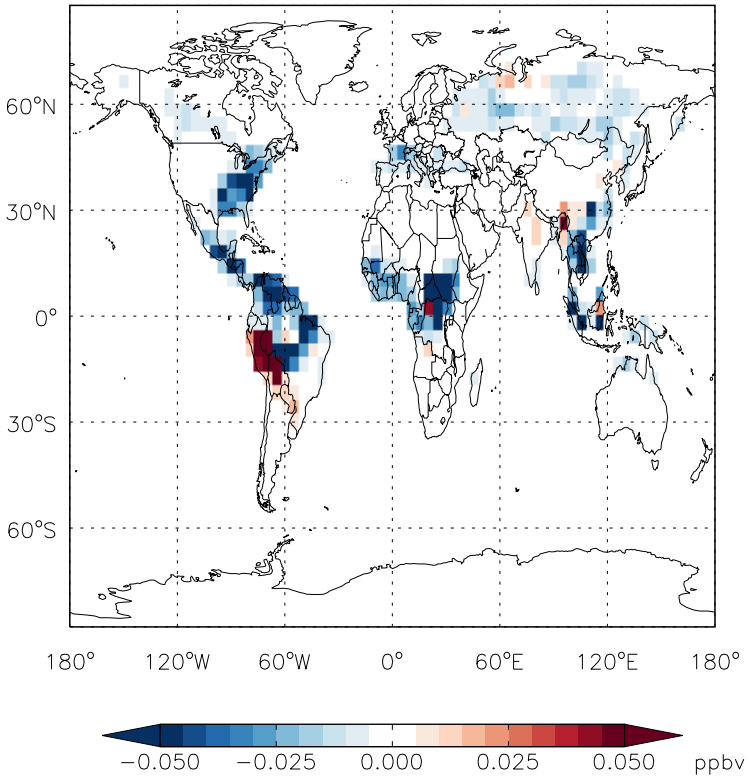
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MVK- Diff @ 500 hPa for Jul



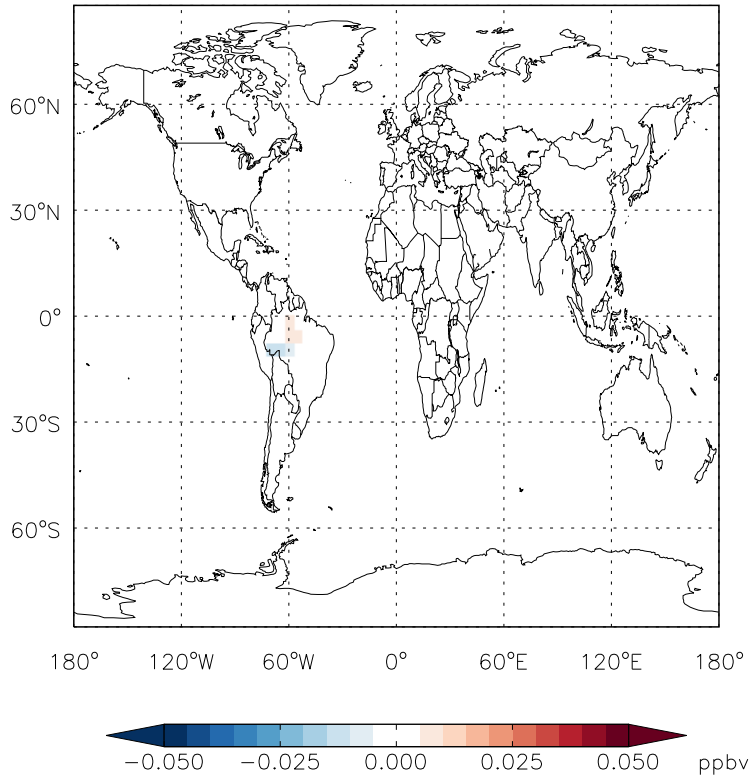
v11-01f-merra2-Run0 - v11-01d-Run1

MVK - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

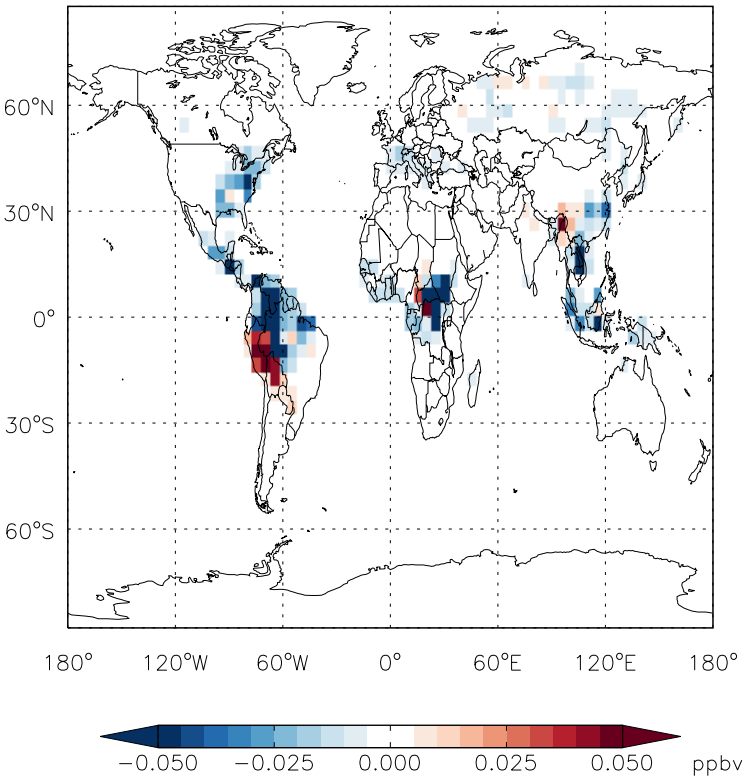
MVK- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

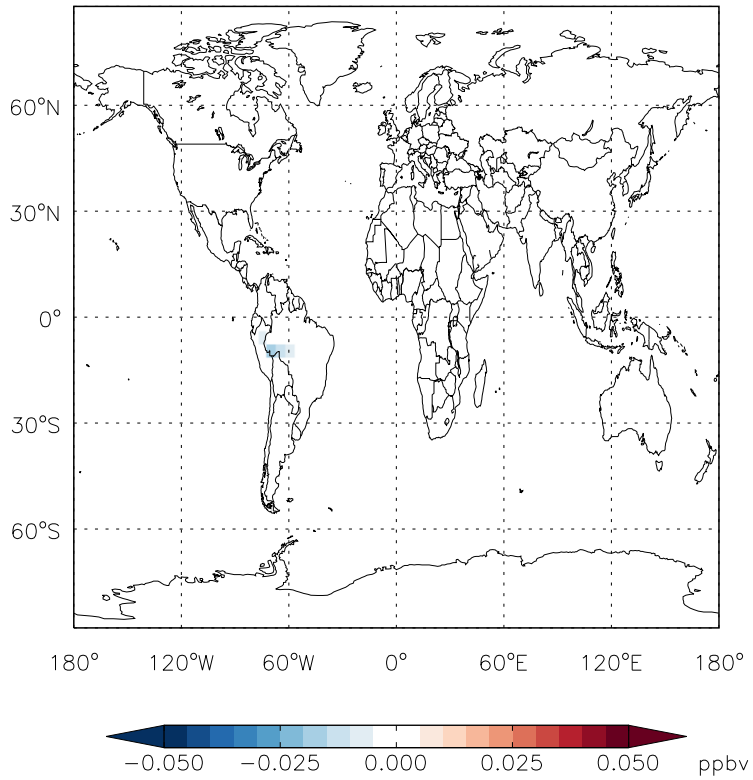
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MACR − Diff @ Surface for Jul



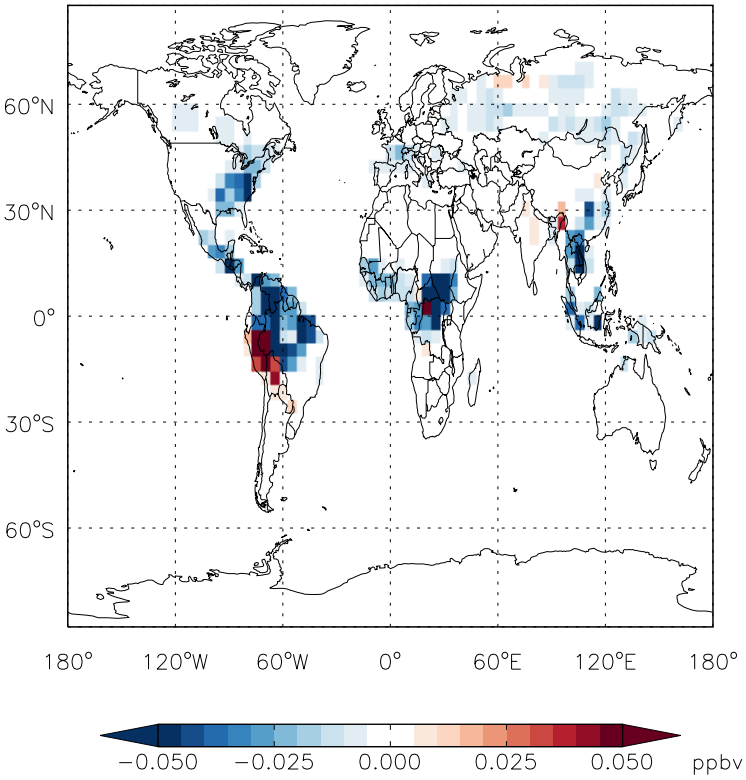
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MACR− Diff @ 500 hPa for Jul



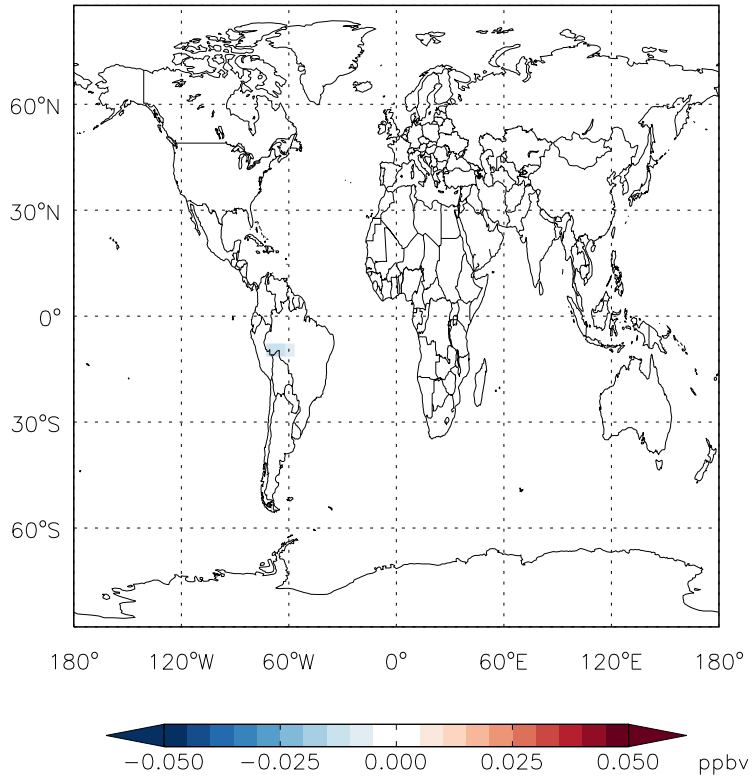
v11−01f−merra2−Run0 − v11−01d−Run1

MACR − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

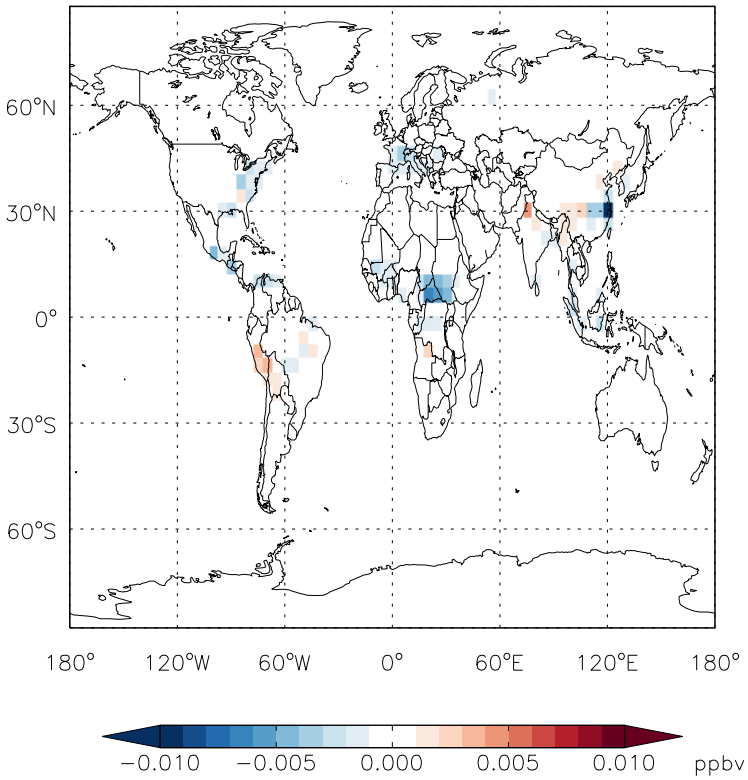
MACR− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

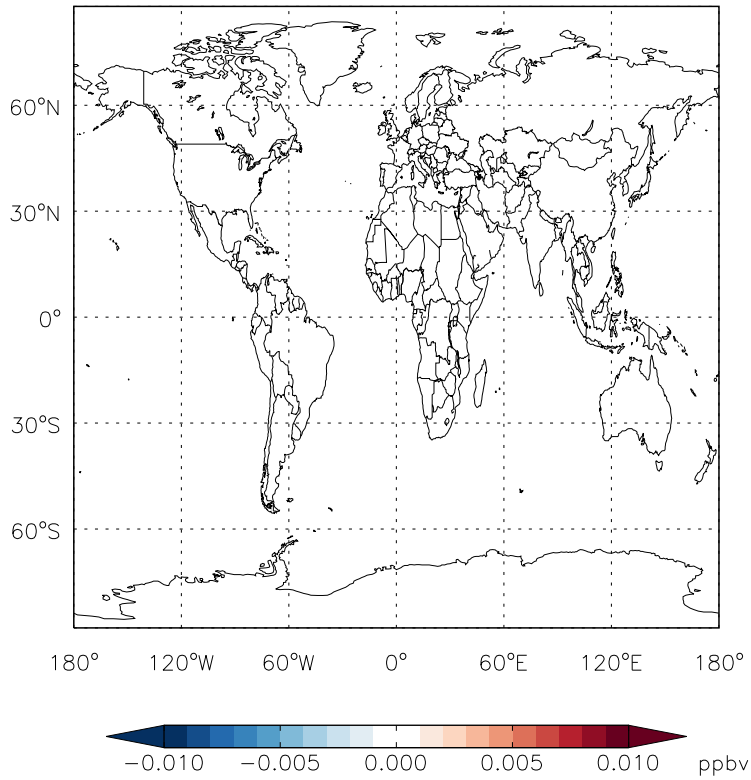
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

PMN − Diff @ Surface for Jul



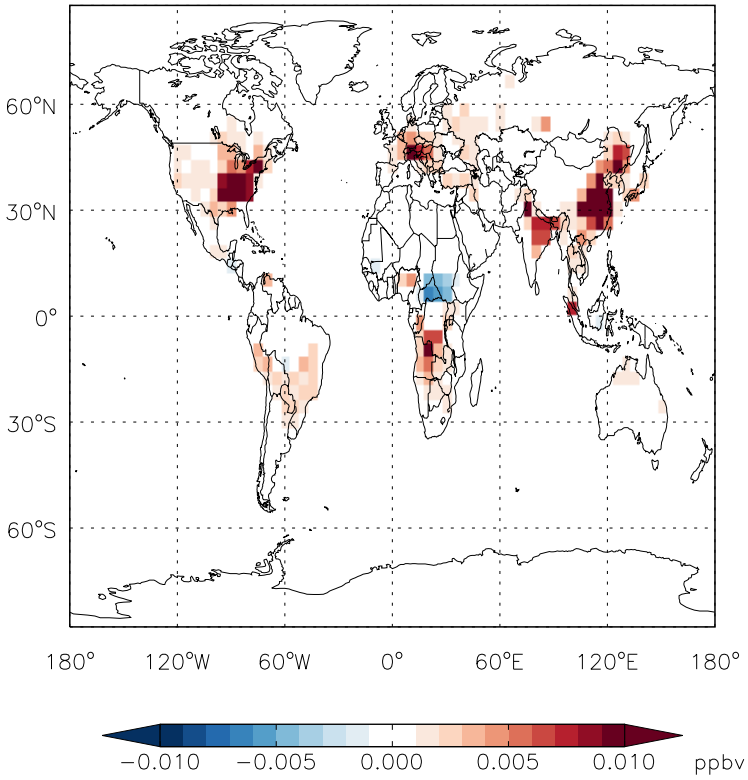
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

PMN− Diff @ 500 hPa for Jul



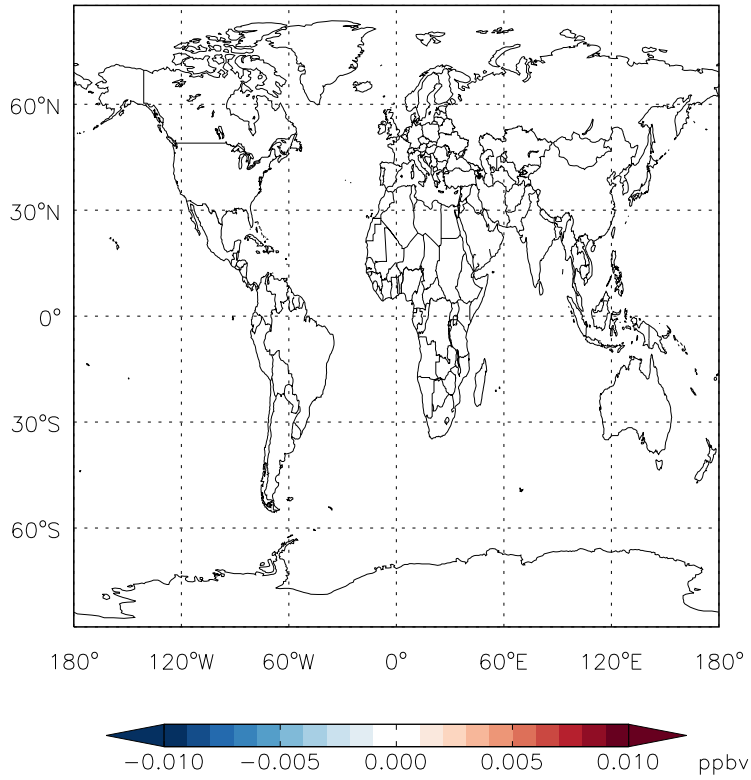
v11−01f−merra2−Run0 − v11−01d−Run1

PMN − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

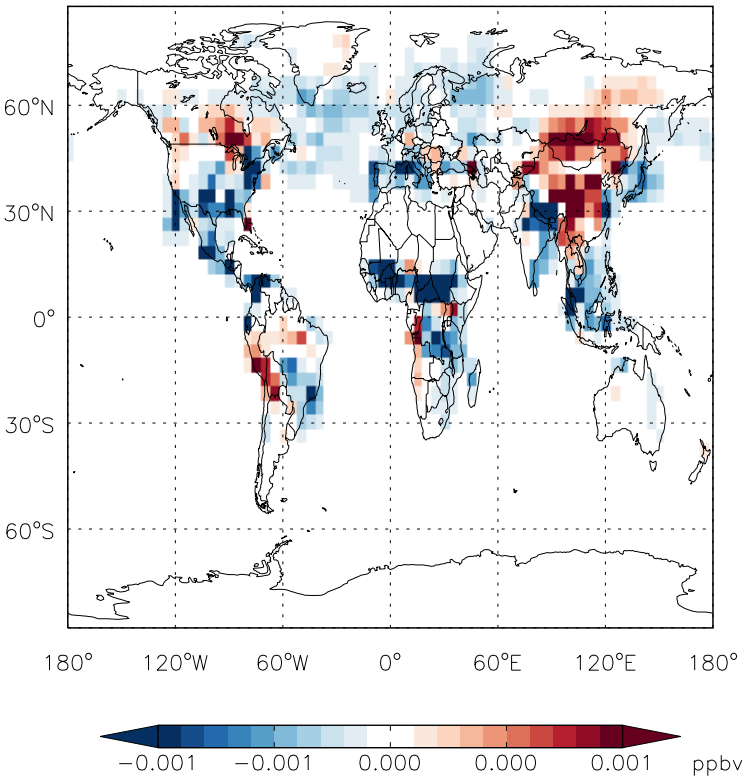
PMN− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

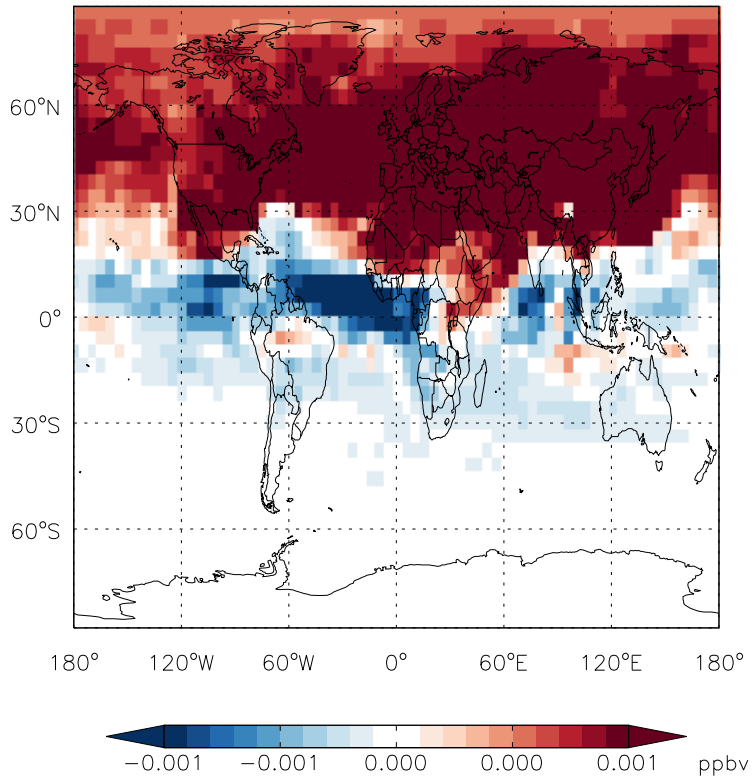
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

PPN − Diff @ Surface for Jul



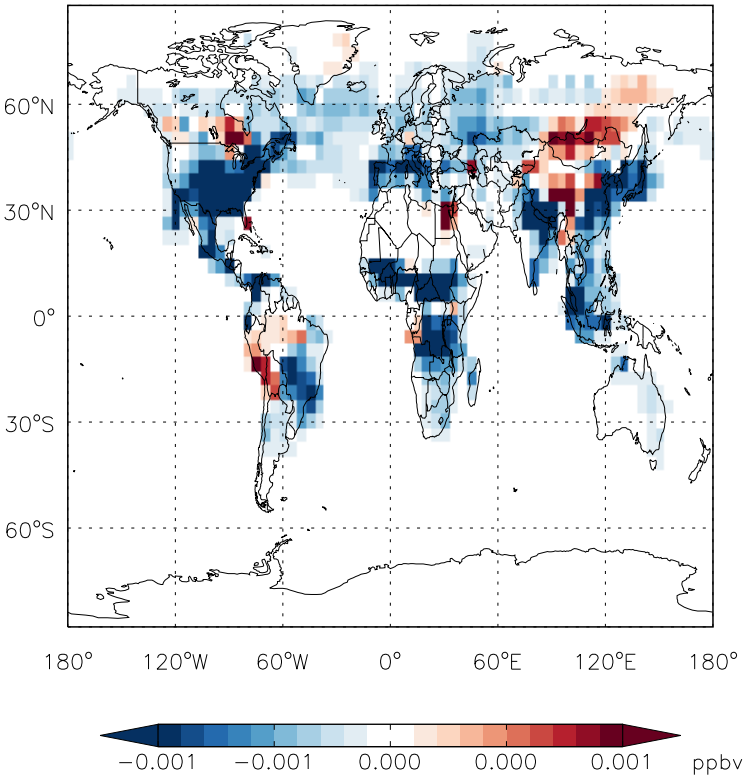
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

PPN− Diff @ 500 hPa for Jul



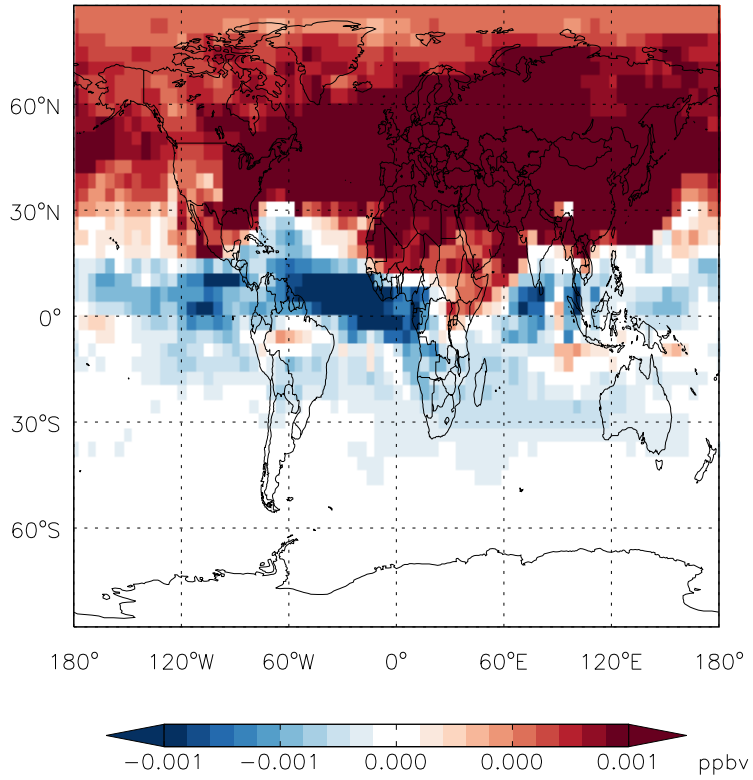
v11−01f−merra2−Run0 − v11−01d−Run1

PPN − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

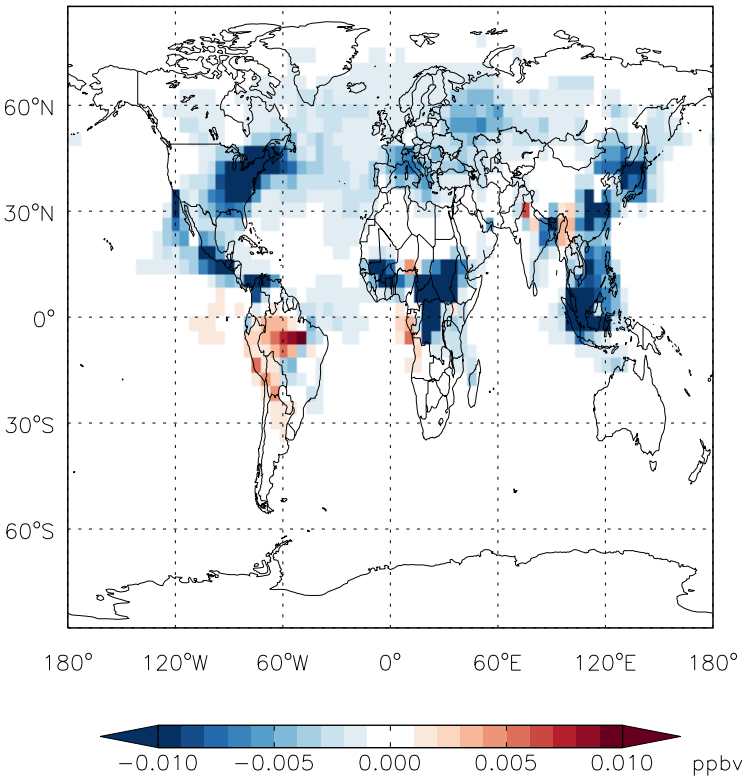
PPN− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

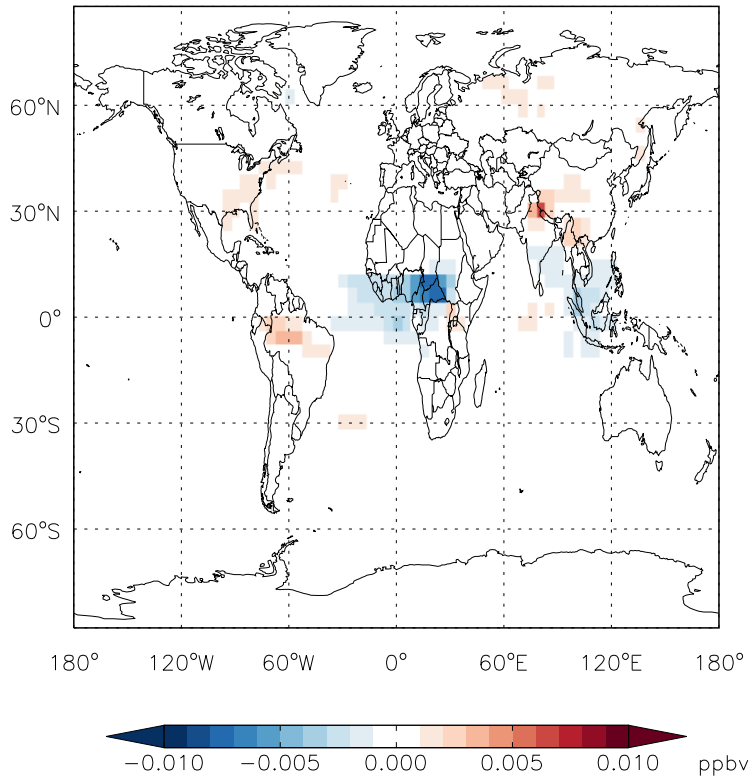
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

R4N2 - Diff @ Surface for Jul



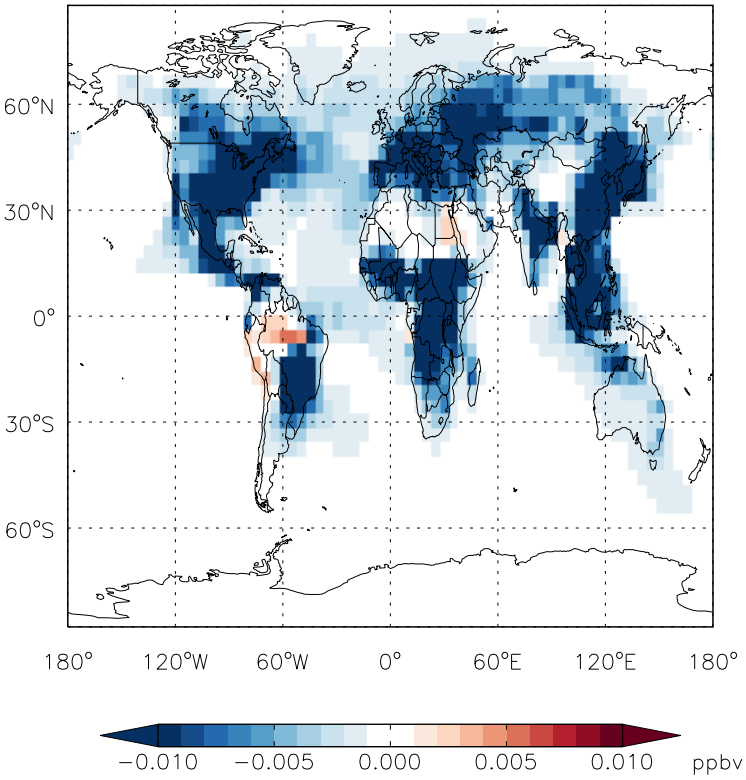
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

R4N2- Diff @ 500 hPa for Jul



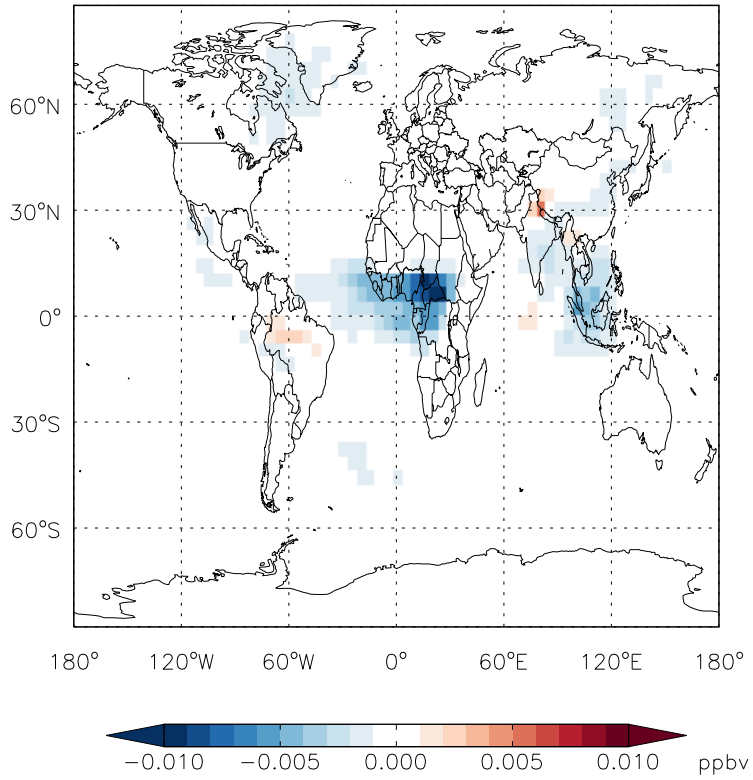
v11-01f-merra2-Run0 - v11-01d-Run1

R4N2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

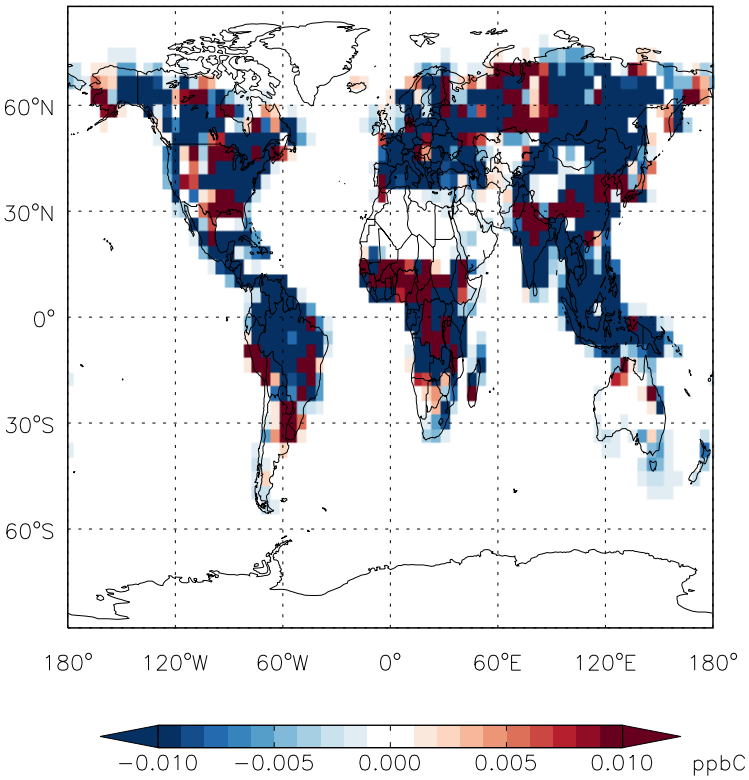
R4N2- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

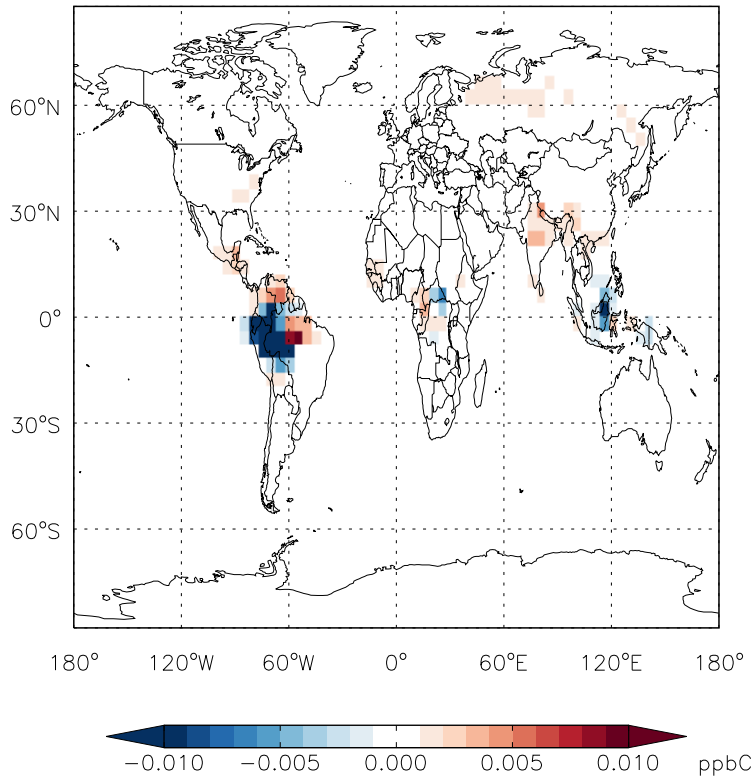
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

PRPE - Diff @ Surface for Jul



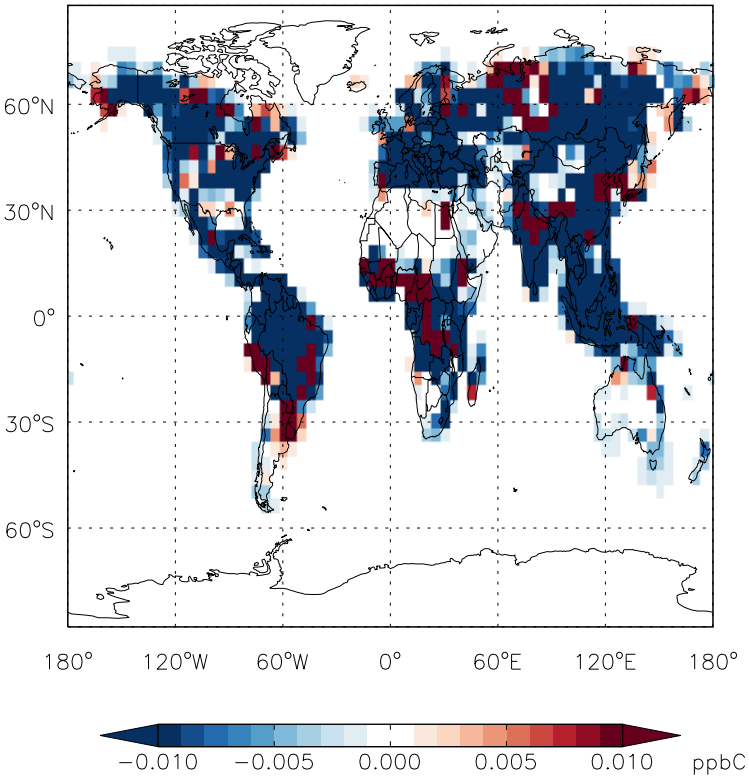
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

PRPE- Diff @ 500 hPa for Jul



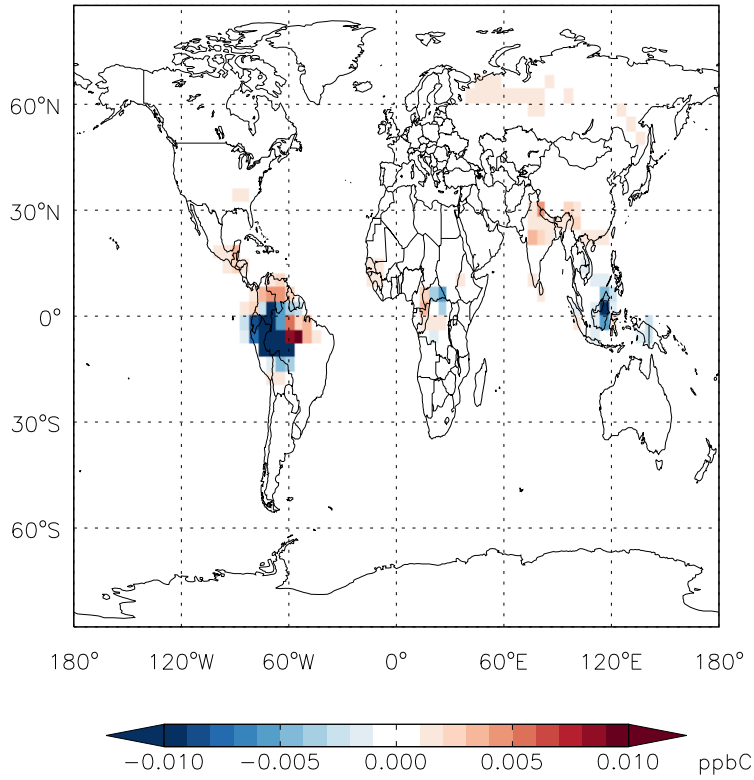
v11-01f-merra2-Run0 - v11-01d-Run1

PRPE - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

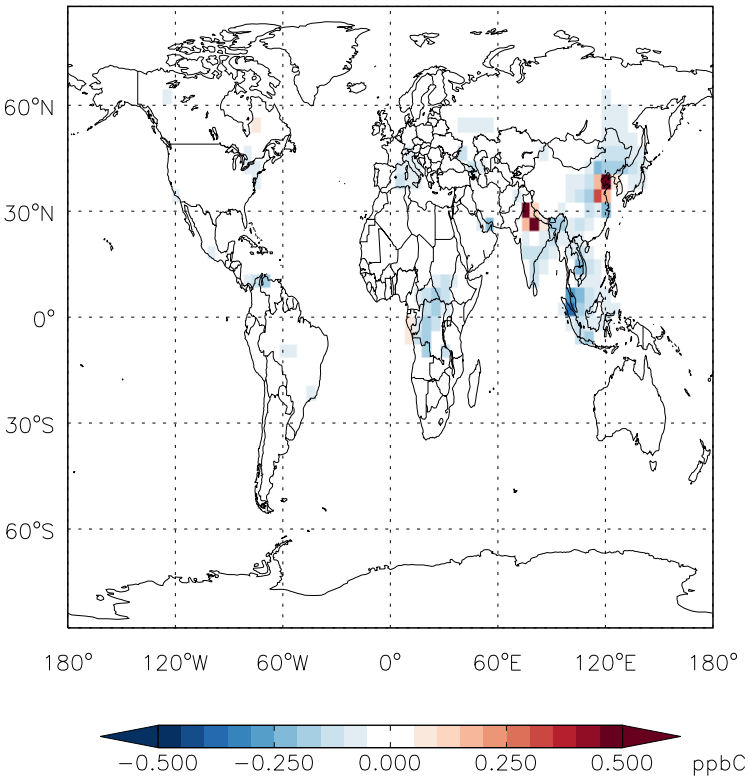
PRPE- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

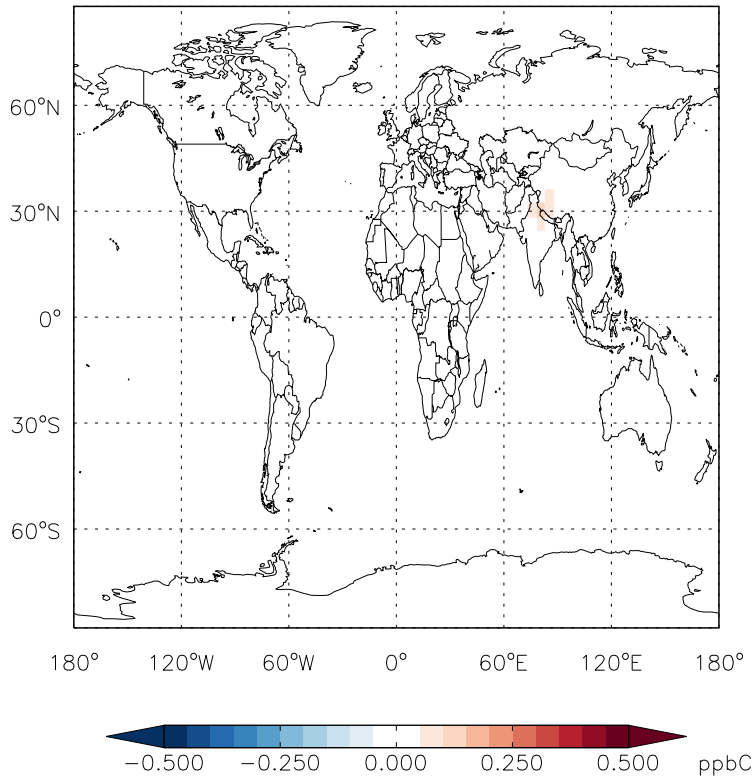
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

C3H8 - Diff @ Surface for Jul



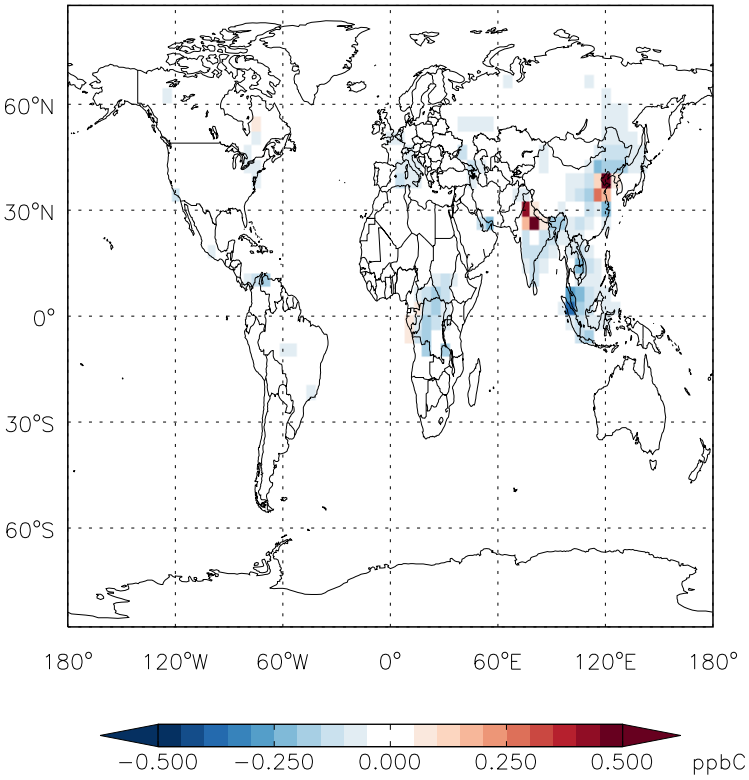
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

C3H8- Diff @ 500 hPa for Jul



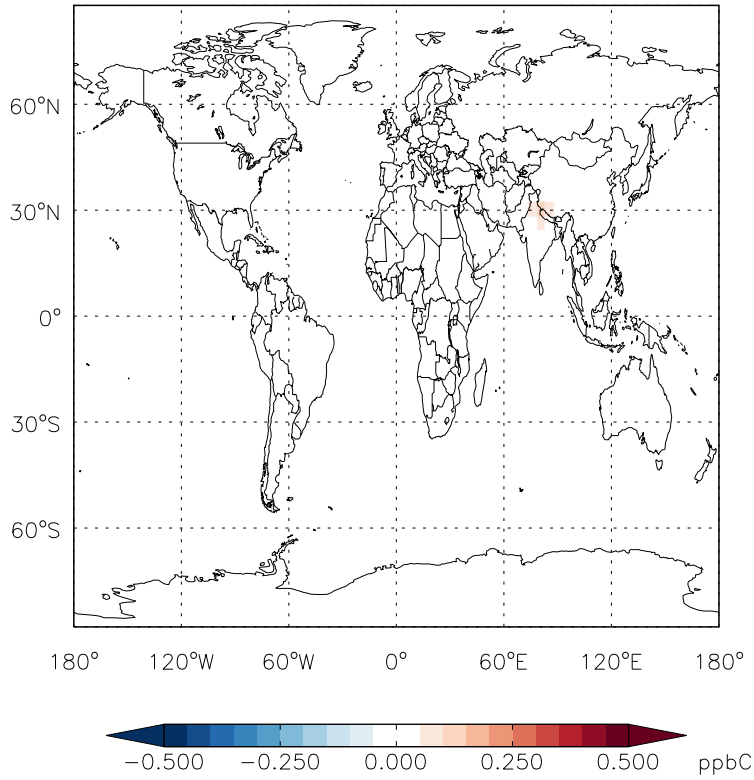
v11-01f-merra2-Run0 - v11-01d-Run1

C3H8 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

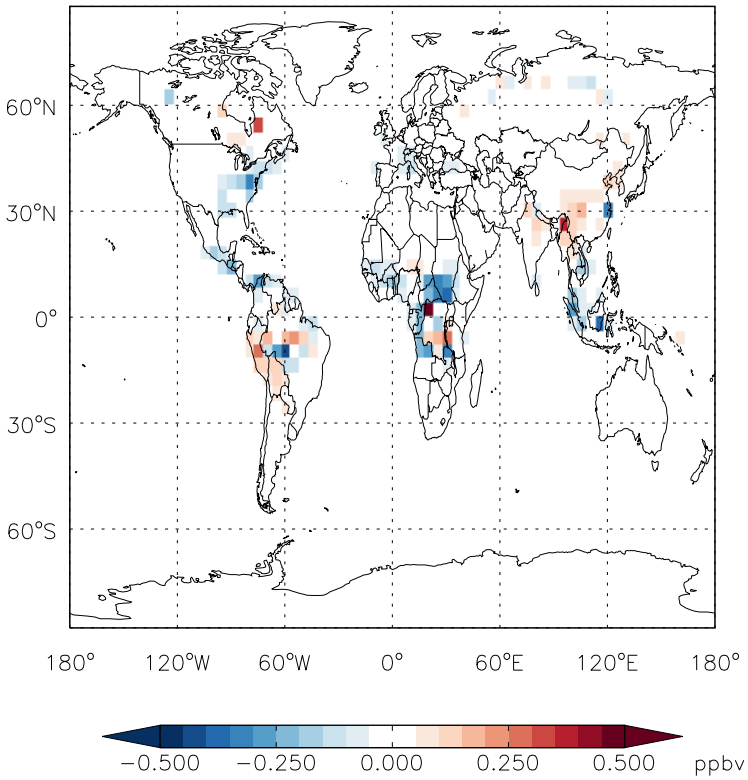
C3H8- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

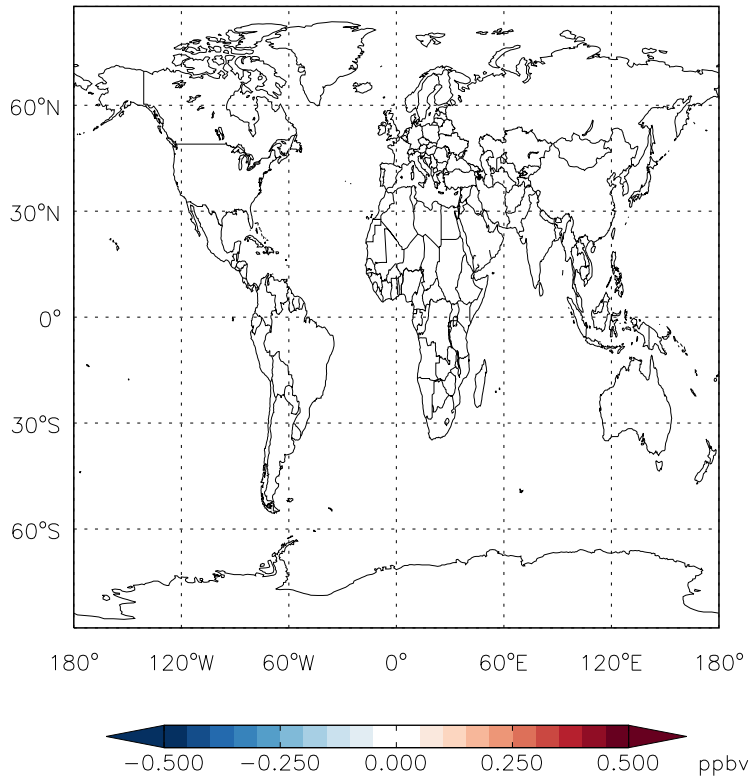
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH2O − Diff @ Surface for Jul



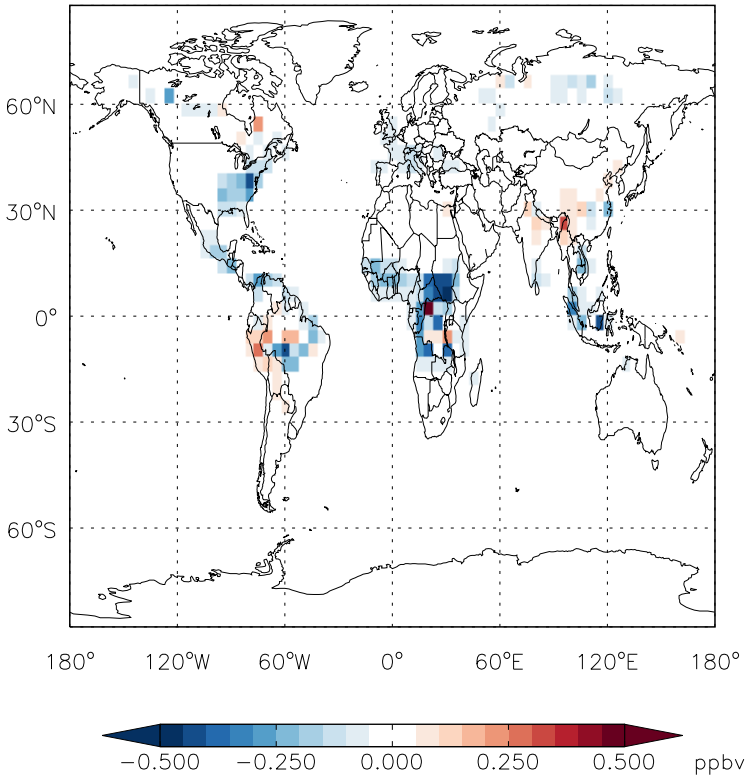
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH2O− Diff @ 500 hPa for Jul



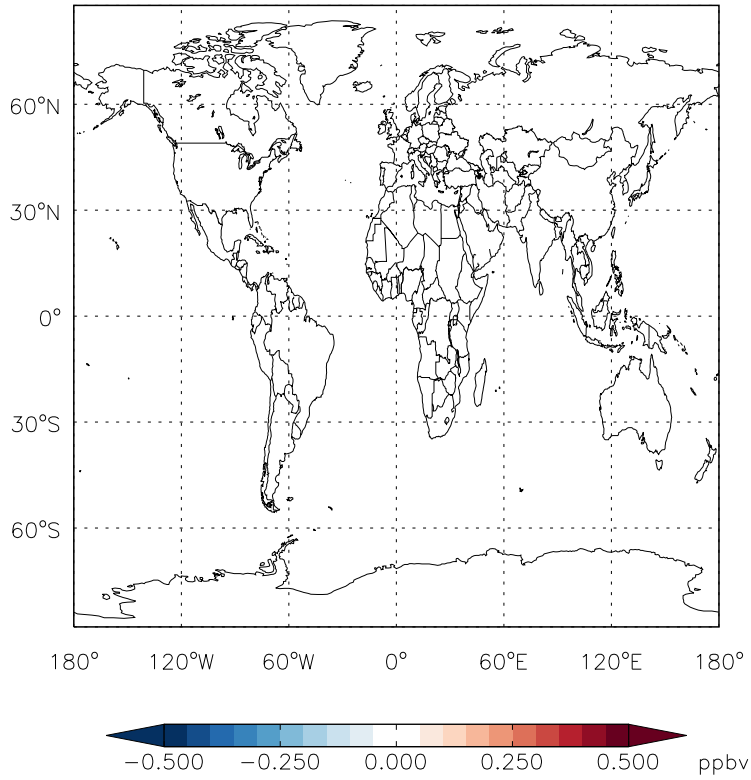
v11−01f−merra2−Run0 − v11−01d−Run1

CH2O − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

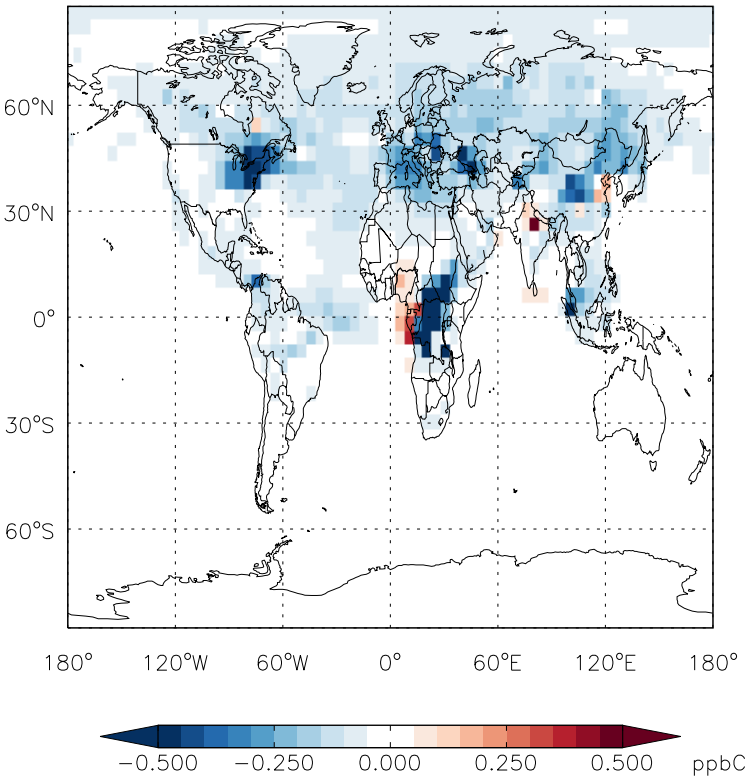
CH2O− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

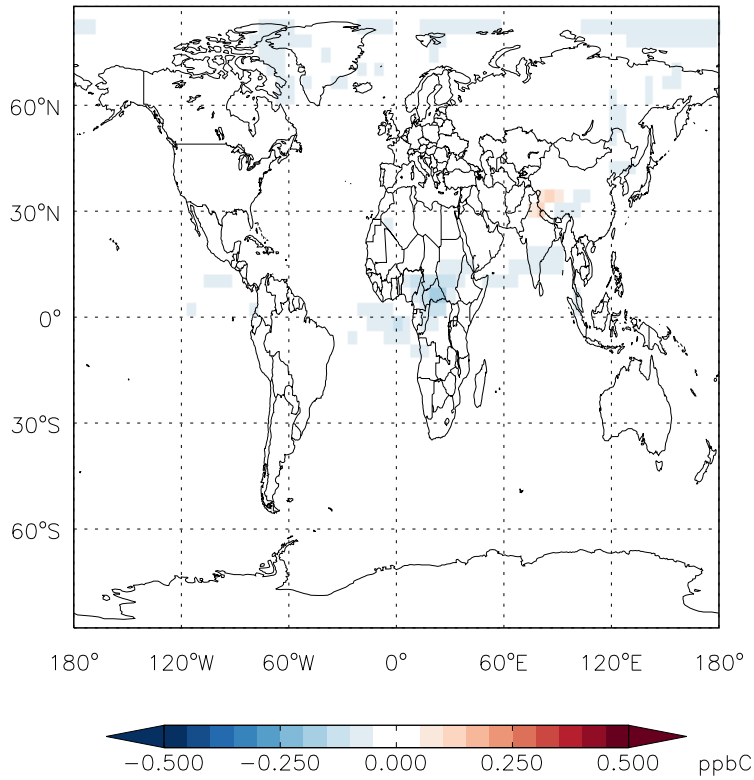
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

C2H6 - Diff @ Surface for Jul



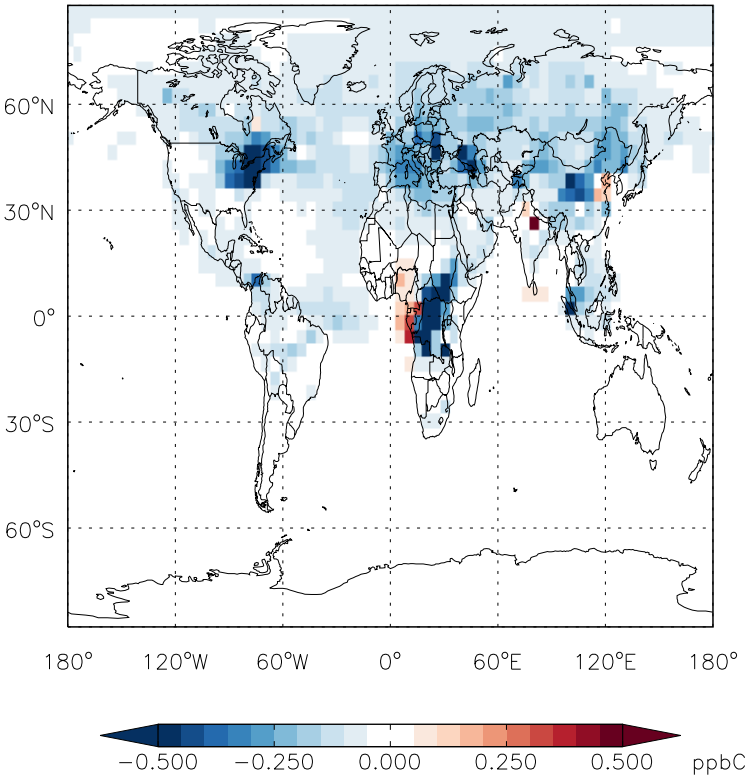
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

C2H6- Diff @ 500 hPa for Jul



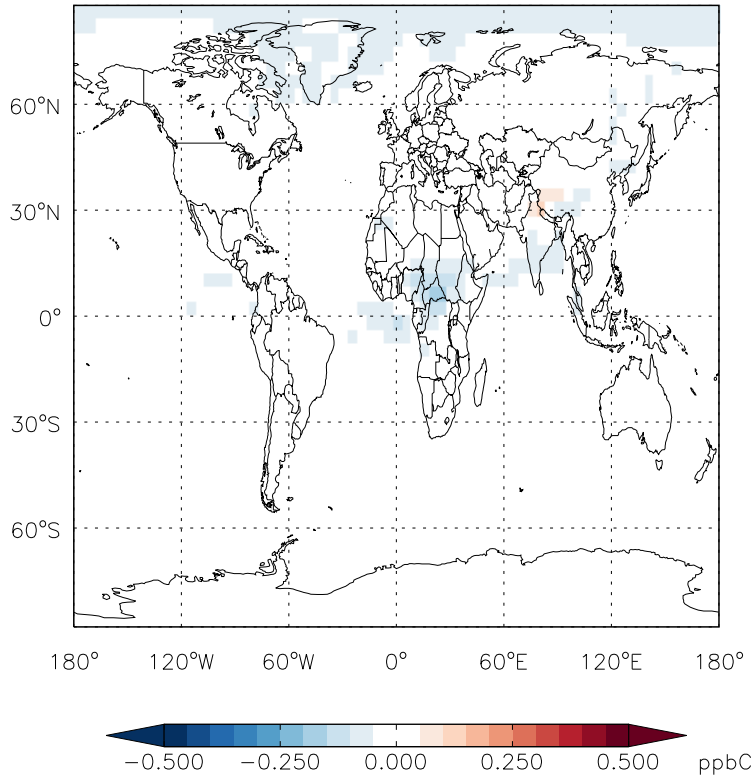
v11-01f-merra2-Run0 - v11-01d-Run1

C2H6 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

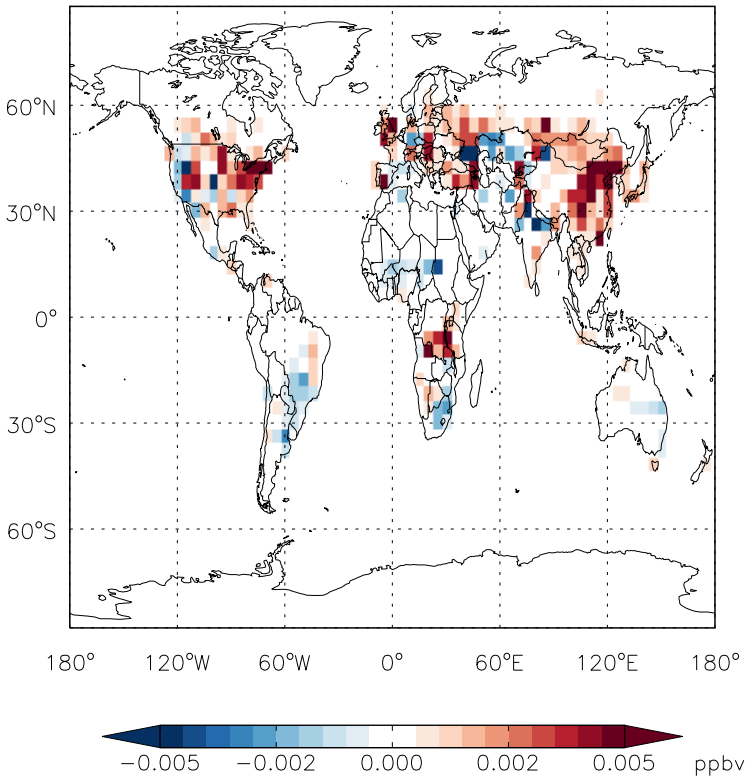
C2H6- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

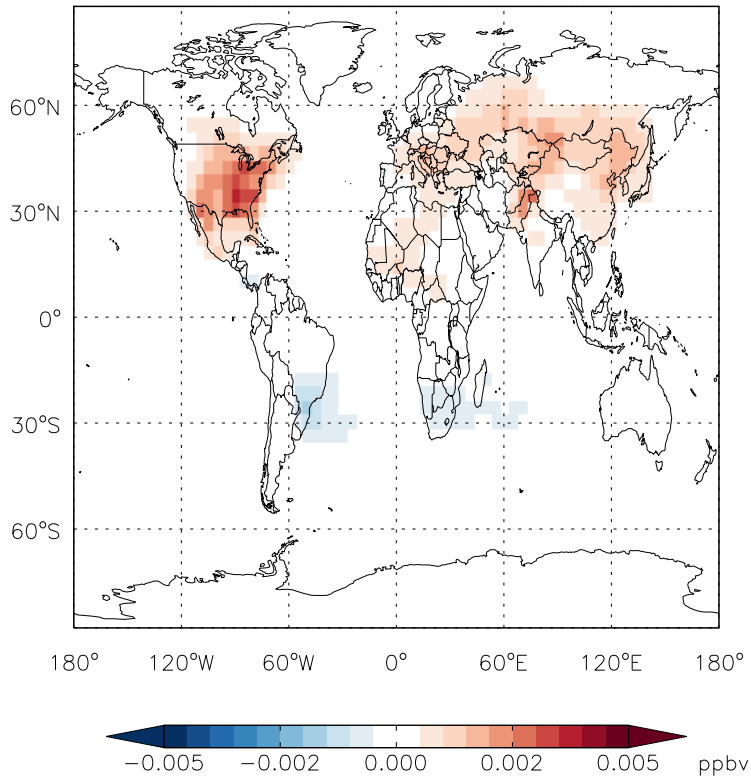
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

N2O5 − Diff @ Surface for Jul



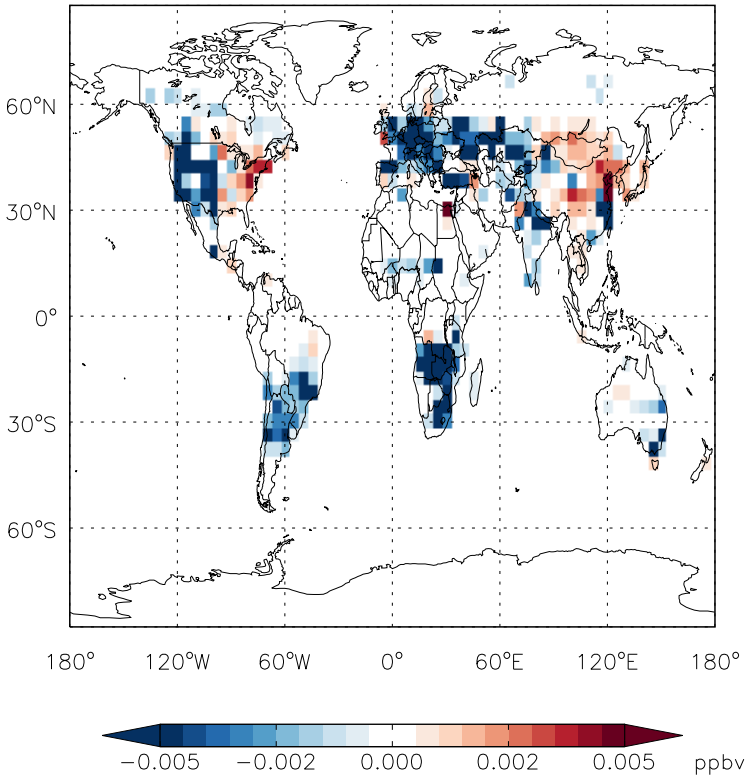
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

N2O5− Diff @ 500 hPa for Jul



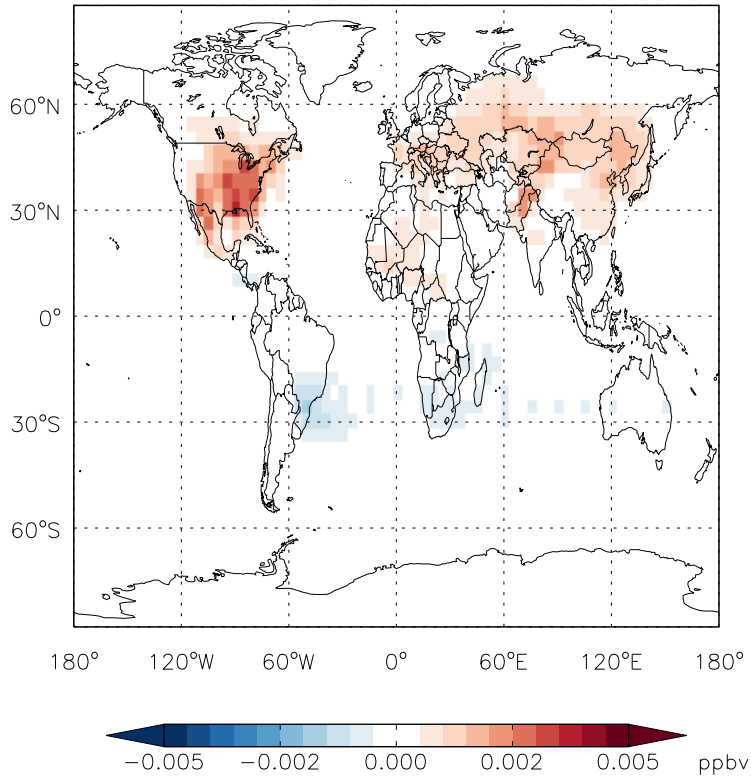
v11−01f−merra2−Run0 − v11−01d−Run1

N2O5 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

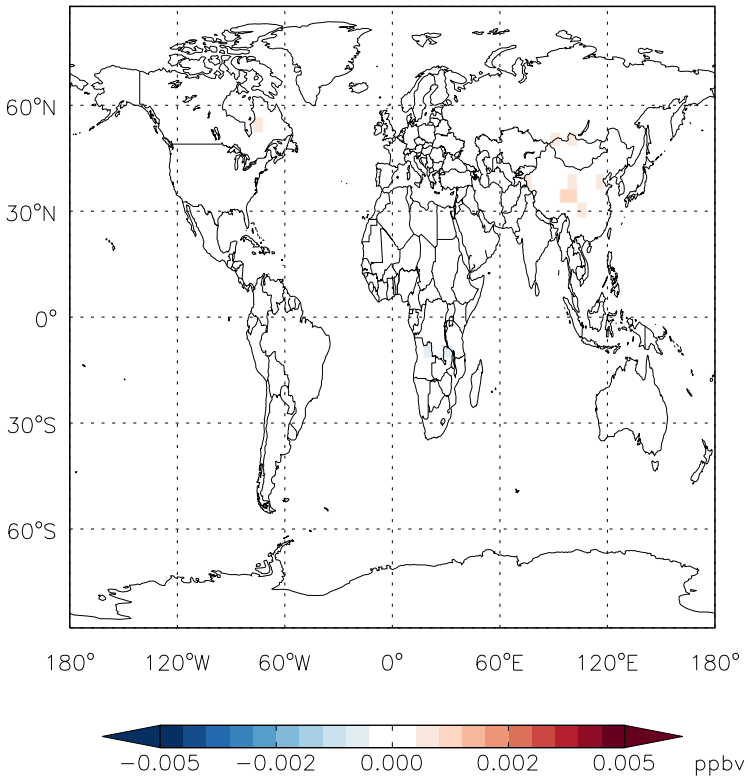
N2O5− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

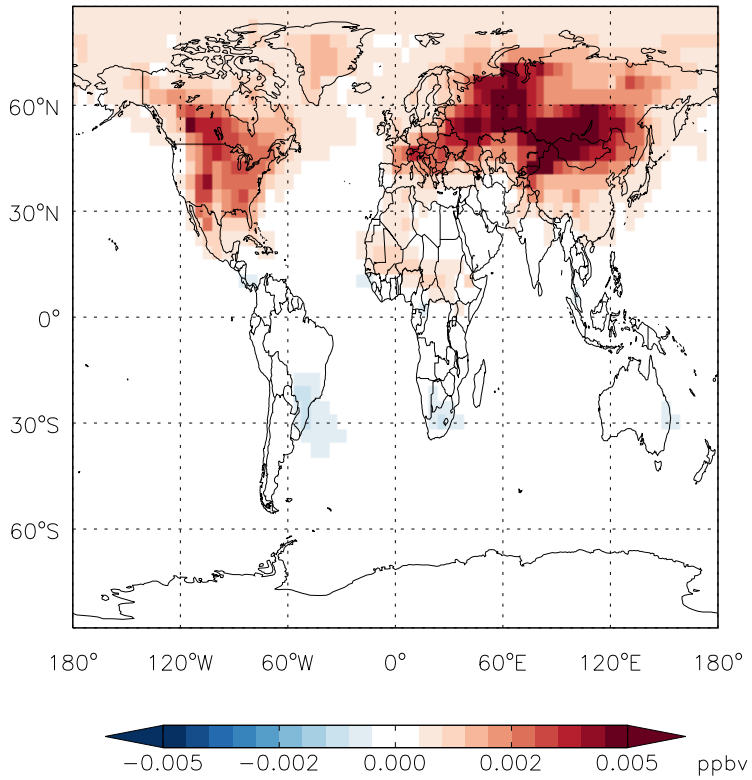
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

HNO4 − Diff @ Surface for Jul



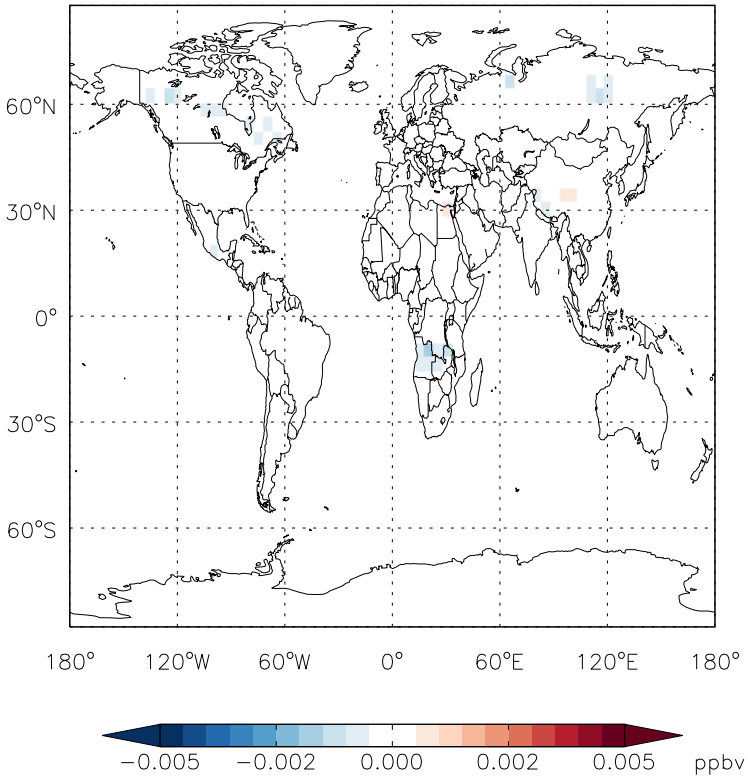
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

HNO4− Diff @ 500 hPa for Jul



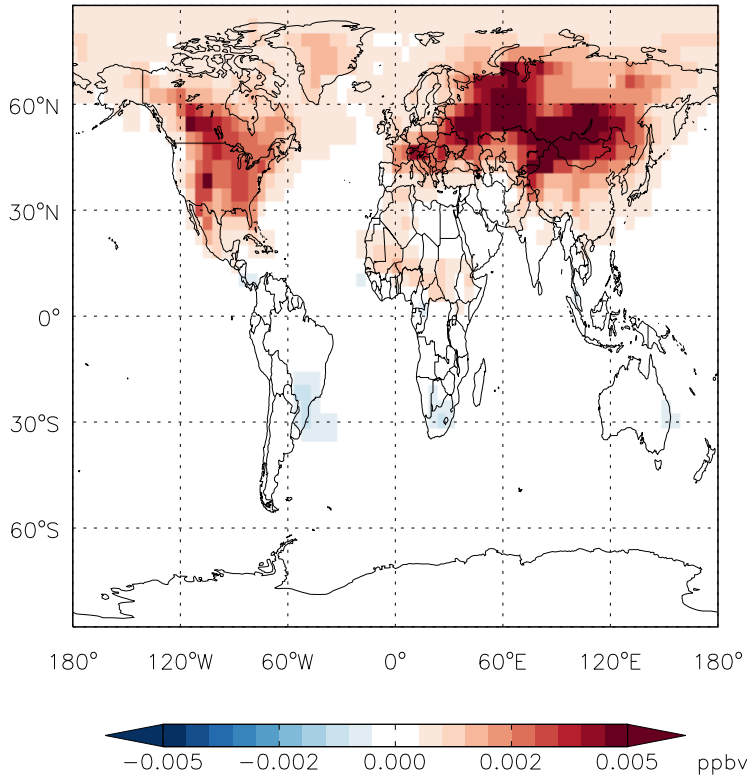
v11−01f−merra2−Run0 − v11−01d−Run1

HNO4 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

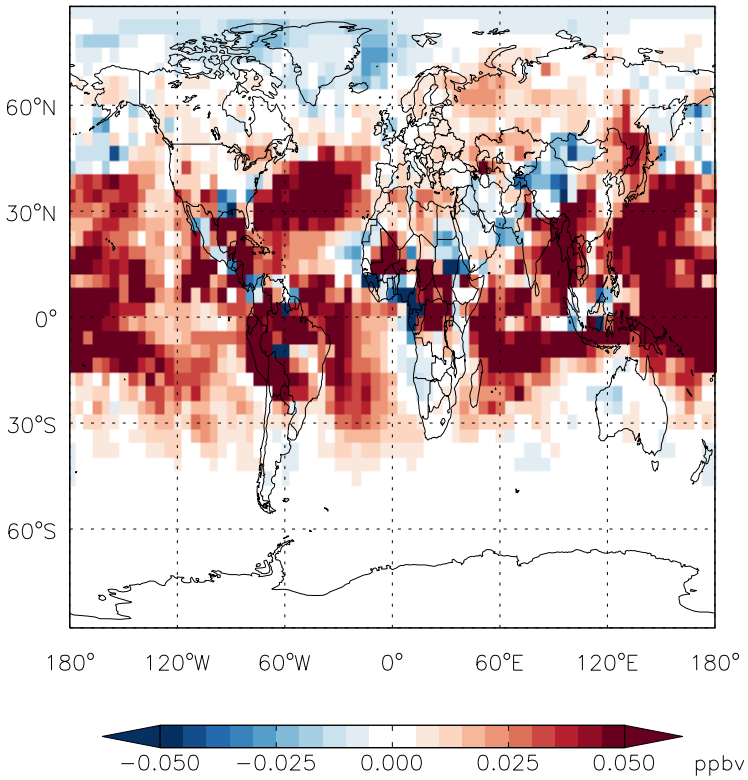
HNO4− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

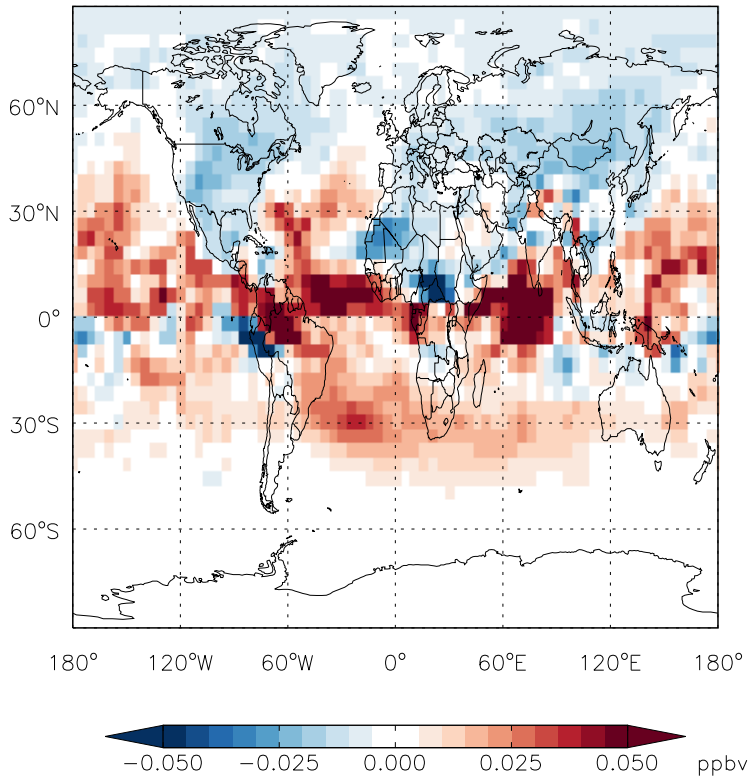
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MP - Diff @ Surface for Jul



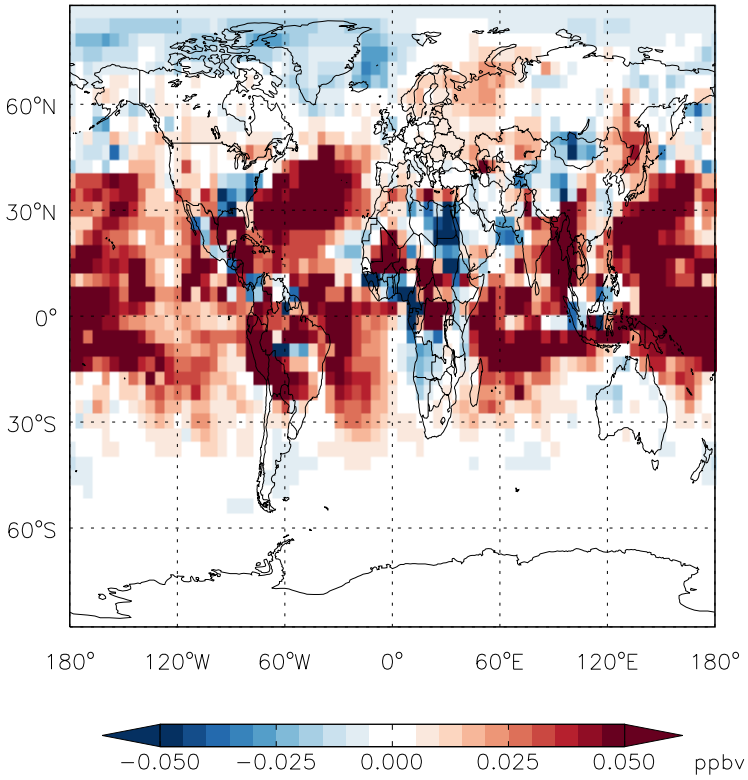
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MP- Diff @ 500 hPa for Jul



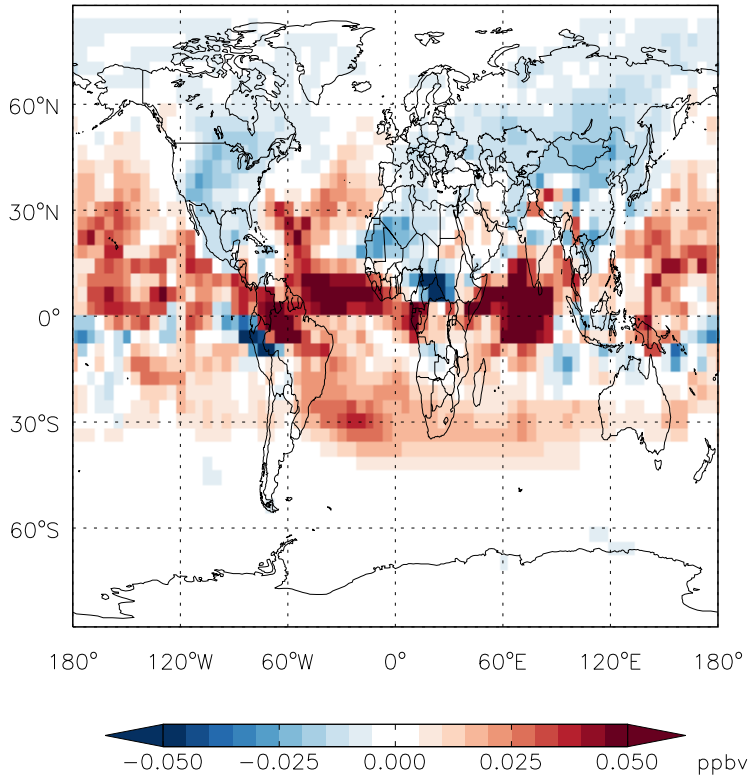
v11-01f-merra2-Run0 - v11-01d-Run1

MP - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

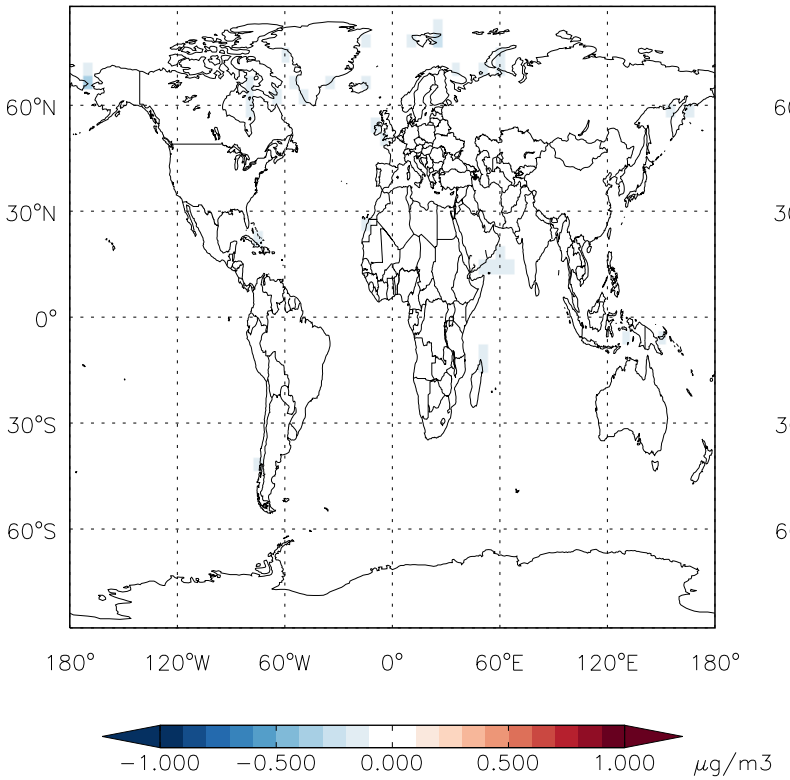
MP- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

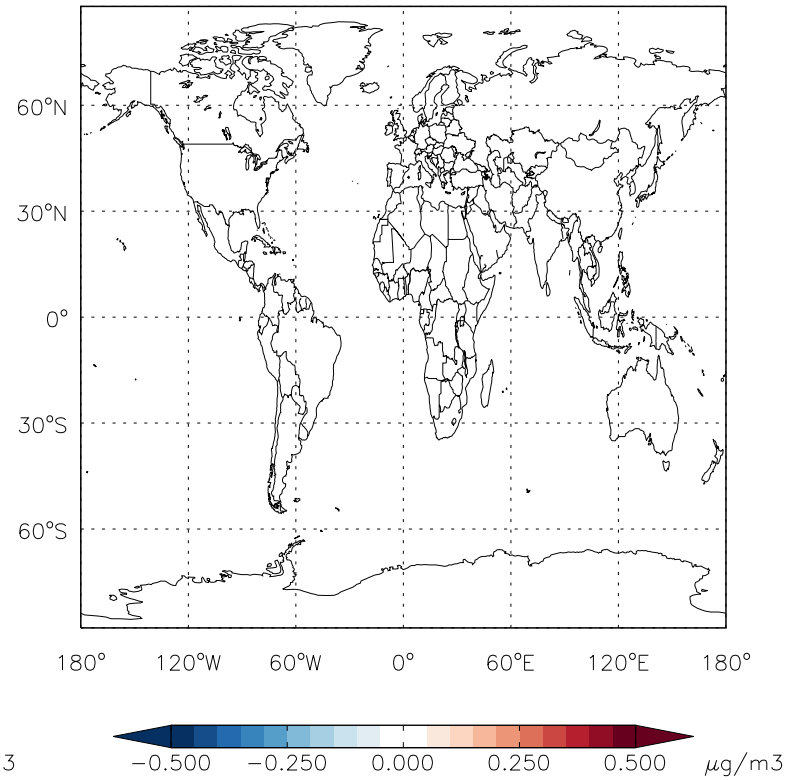
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DMS − Diff @ Surface for Jul



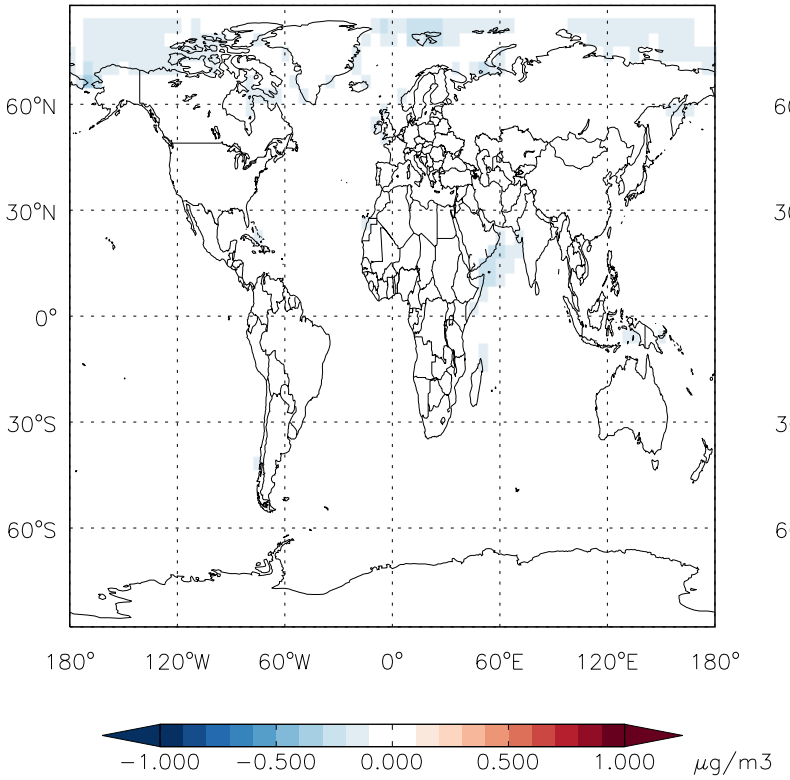
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DMS− Diff @ 500 hPa for Jul



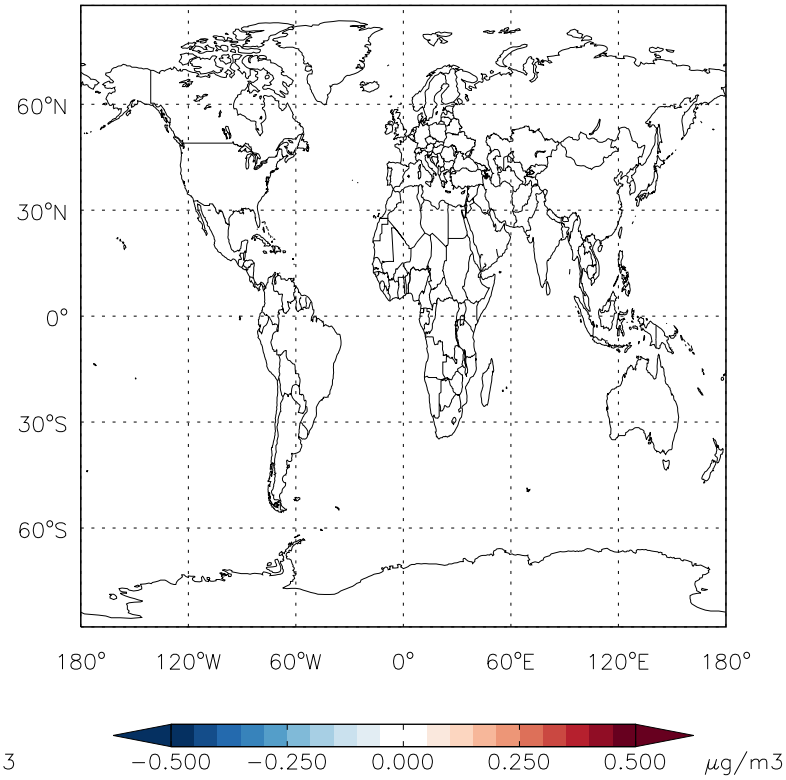
v11−01f−merra2−Run0 − v11−01d−Run1

DMS − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

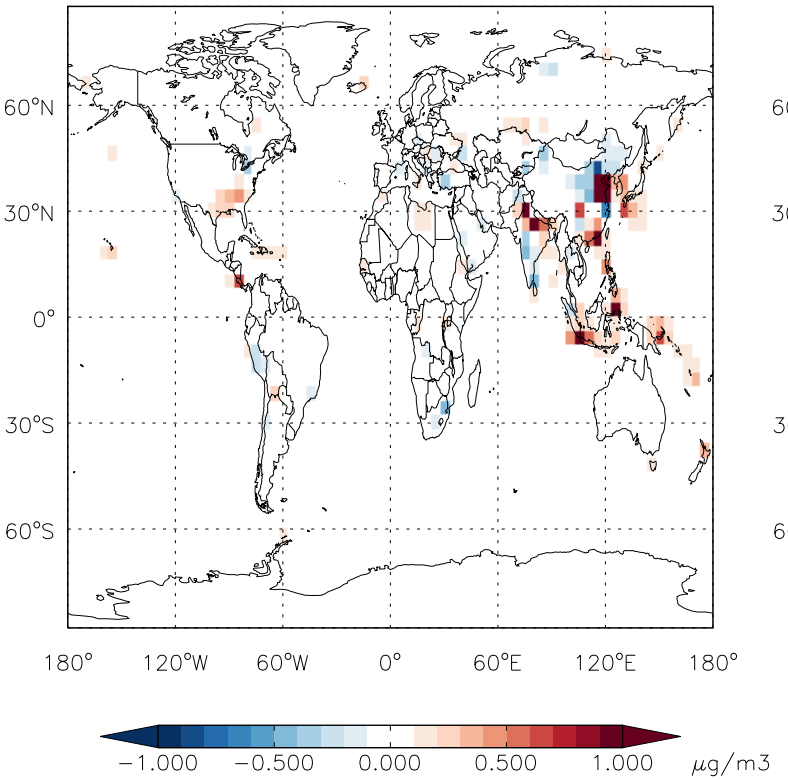
DMS− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

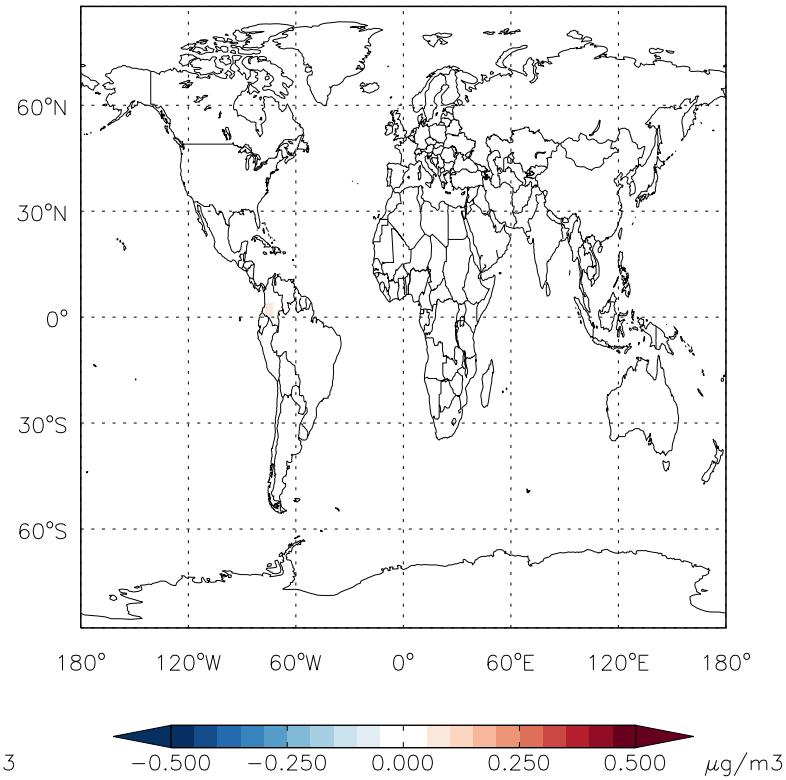
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SO2 − Diff @ Surface for Jul



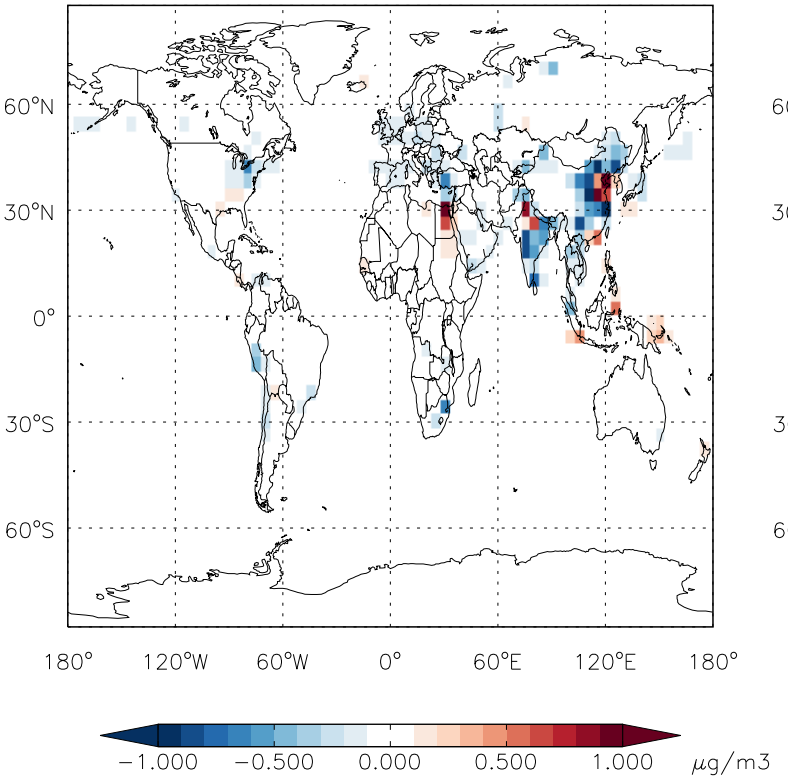
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SO2− Diff @ 500 hPa for Jul



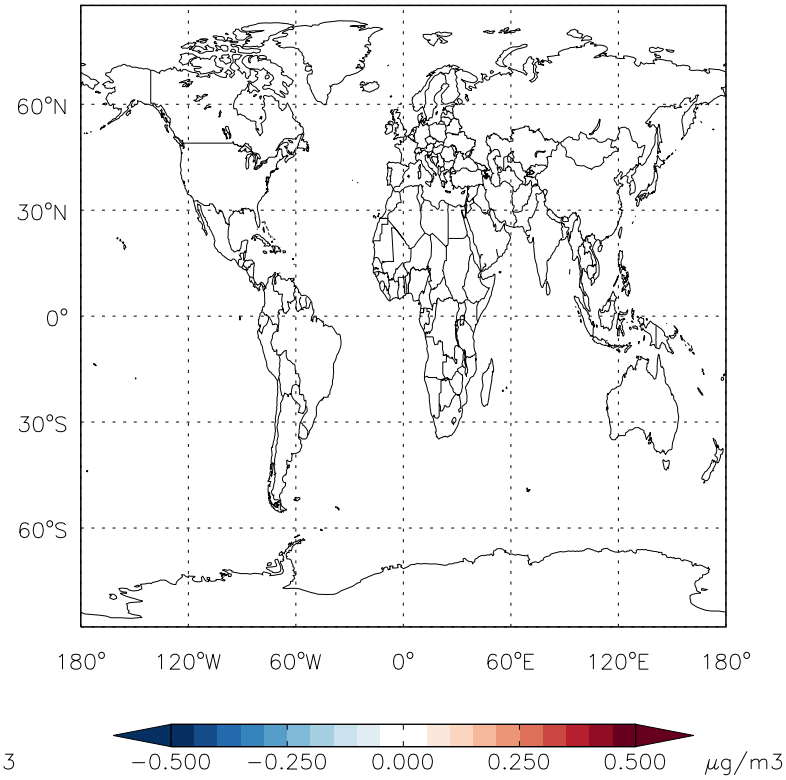
v11−01f−merra2−Run0 − v11−01d−Run1

SO2 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

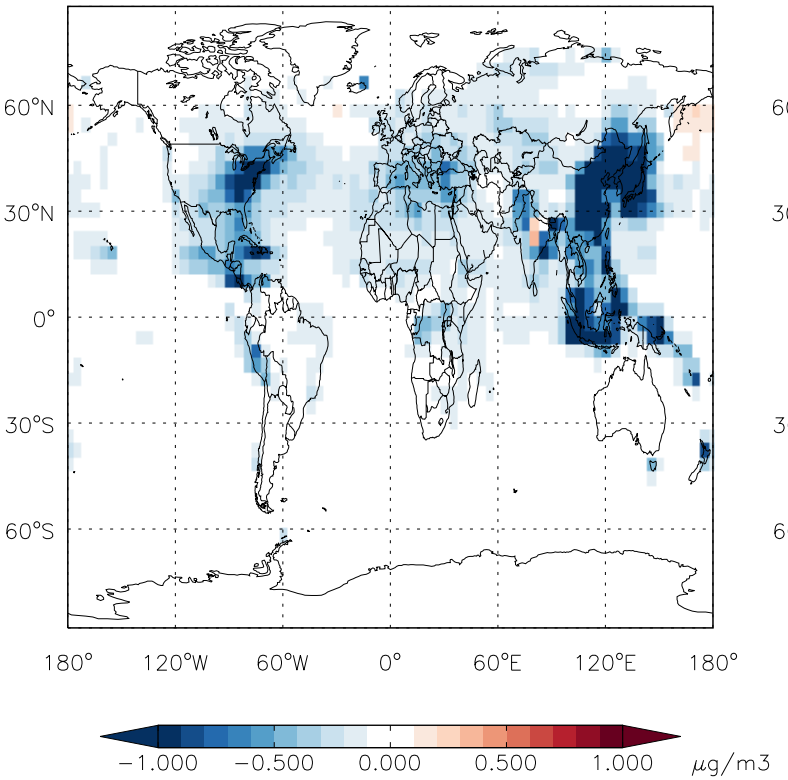
SO2− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

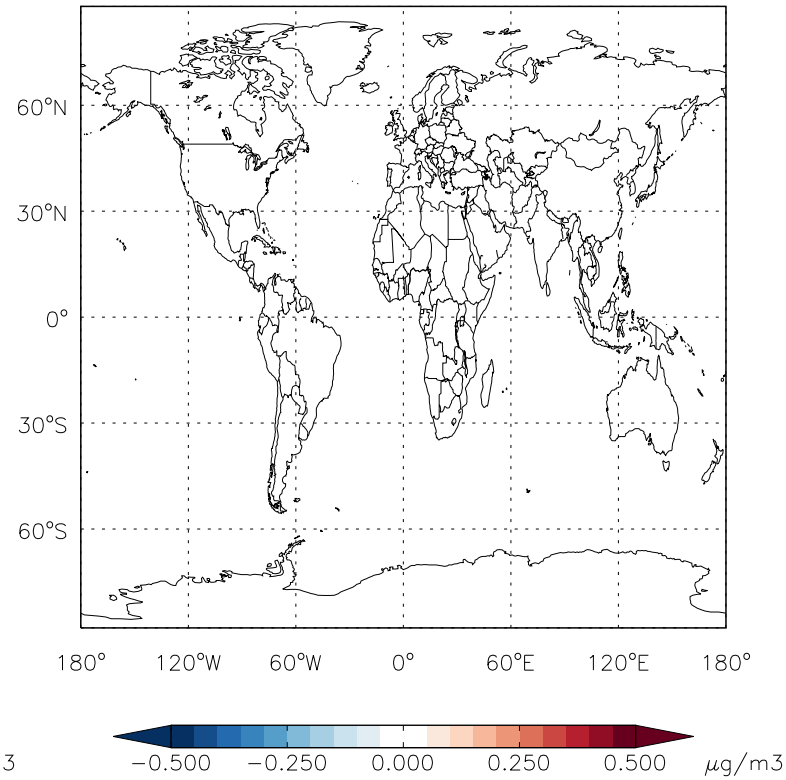
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SO4 − Diff @ Surface for Jul



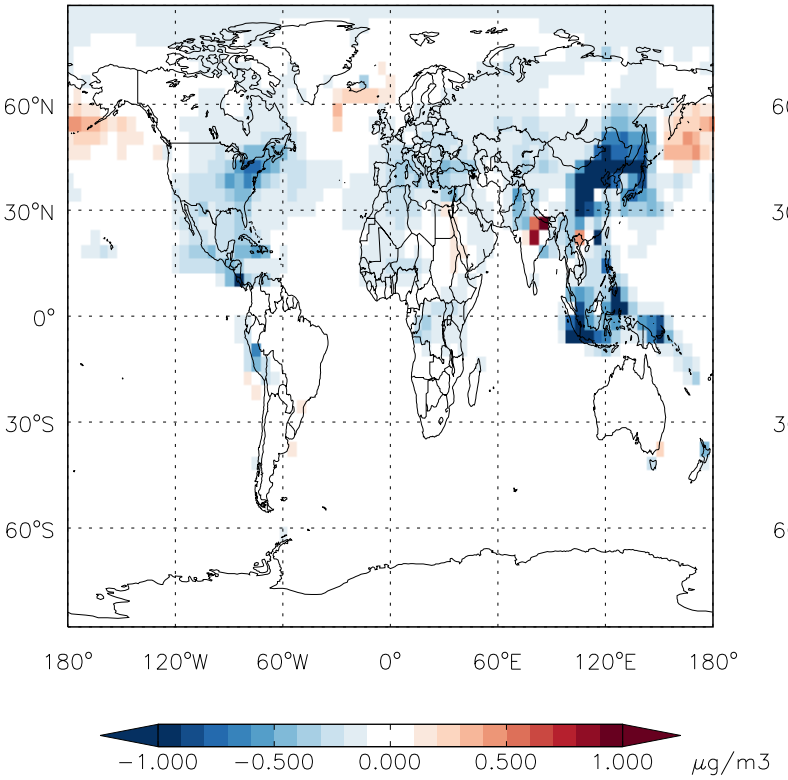
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SO4− Diff @ 500 hPa for Jul



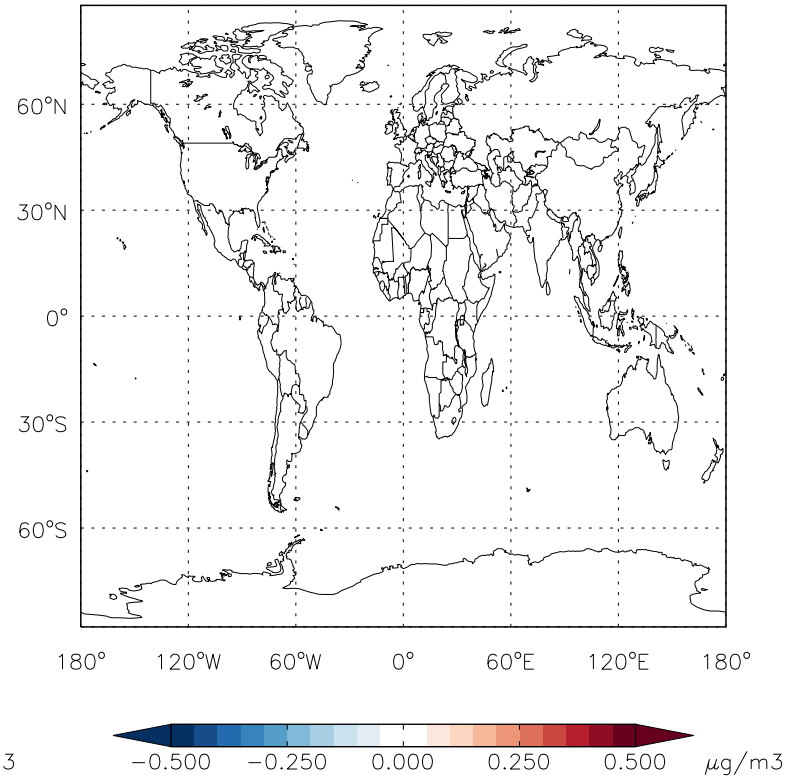
v11−01f−merra2−Run0 − v11−01d−Run1

SO4 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

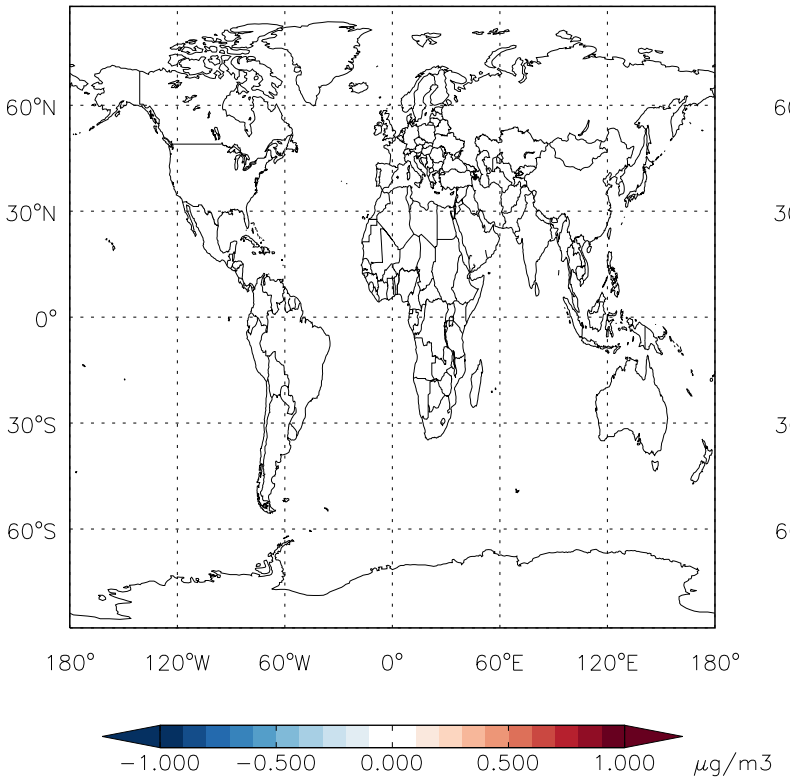
SO4− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

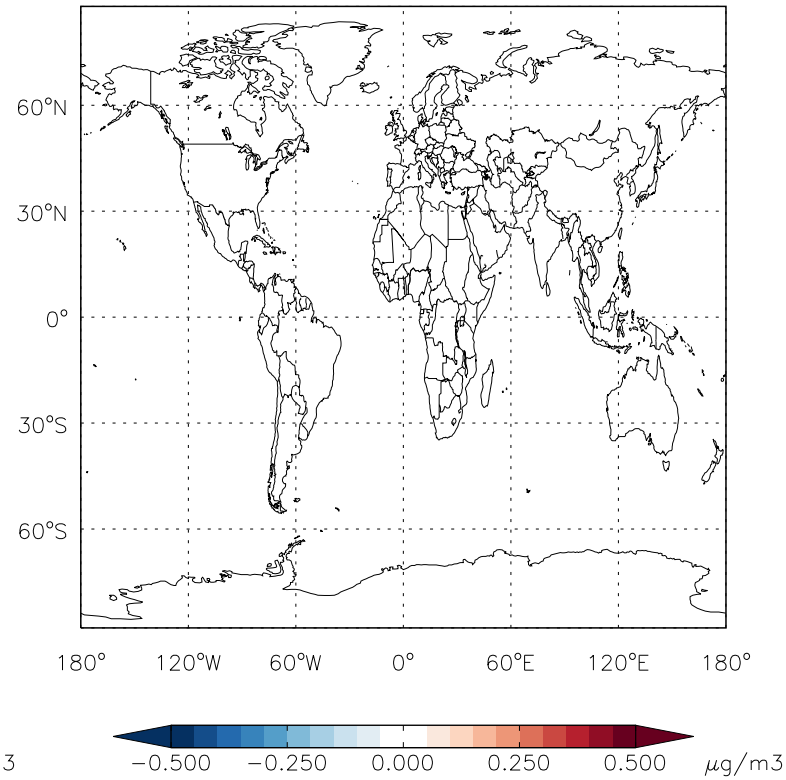
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SO4s − Diff @ Surface for Jul



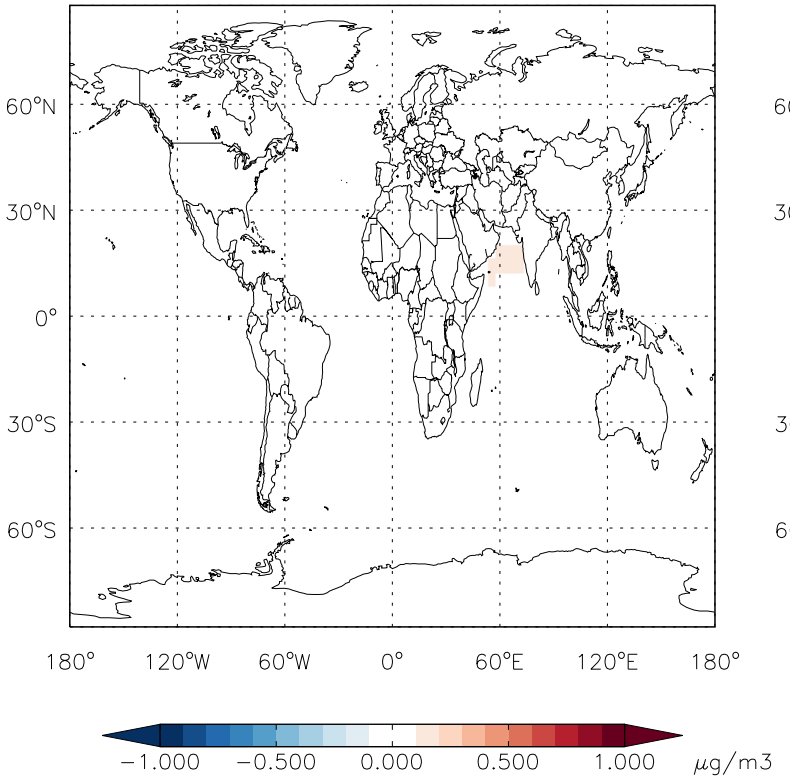
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SO4s− Diff @ 500 hPa for Jul



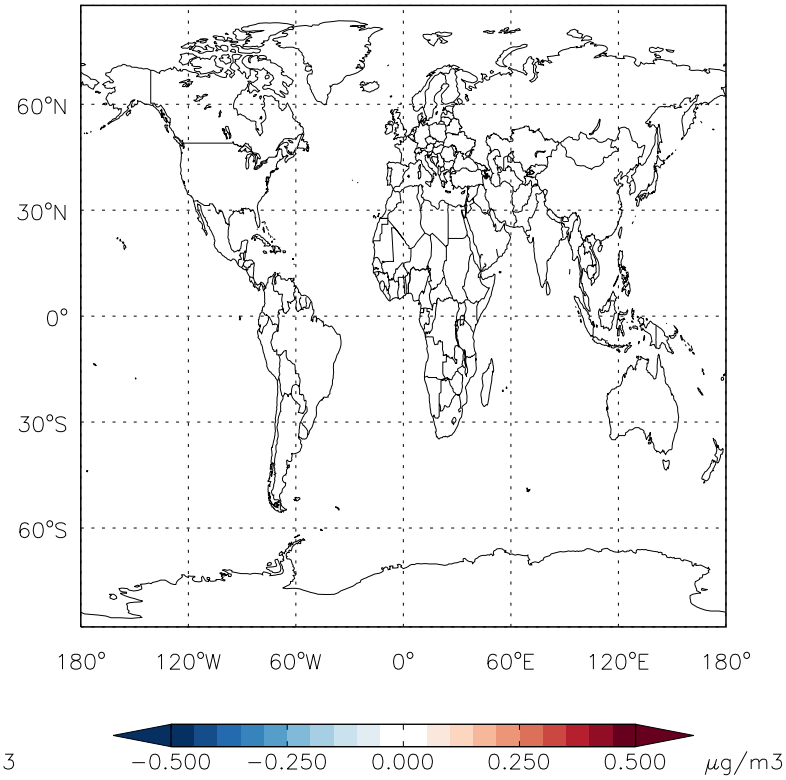
v11−01f−merra2−Run0 − v11−01d−Run1

SO4s − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

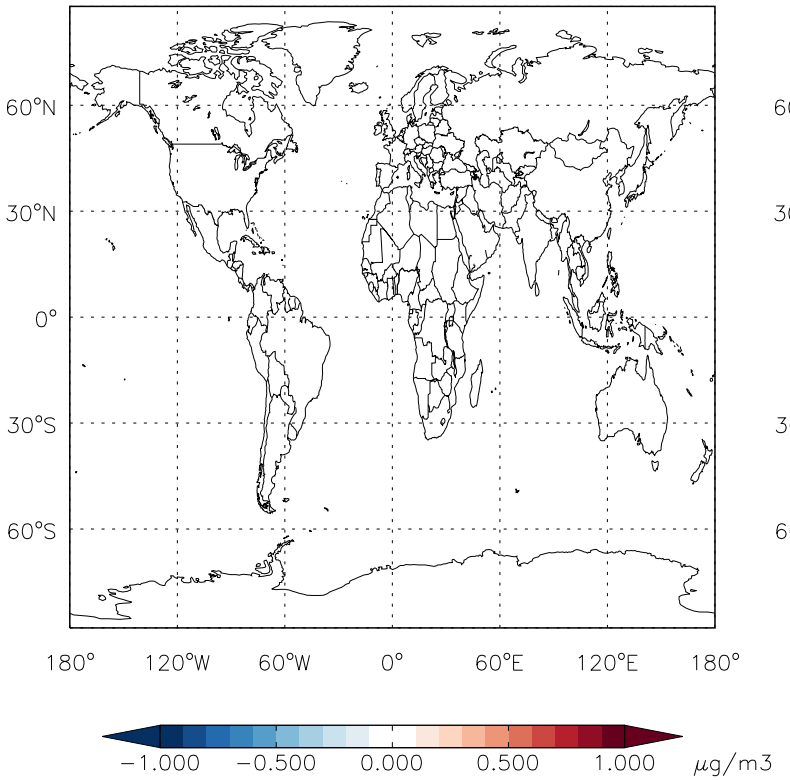
SO4s− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

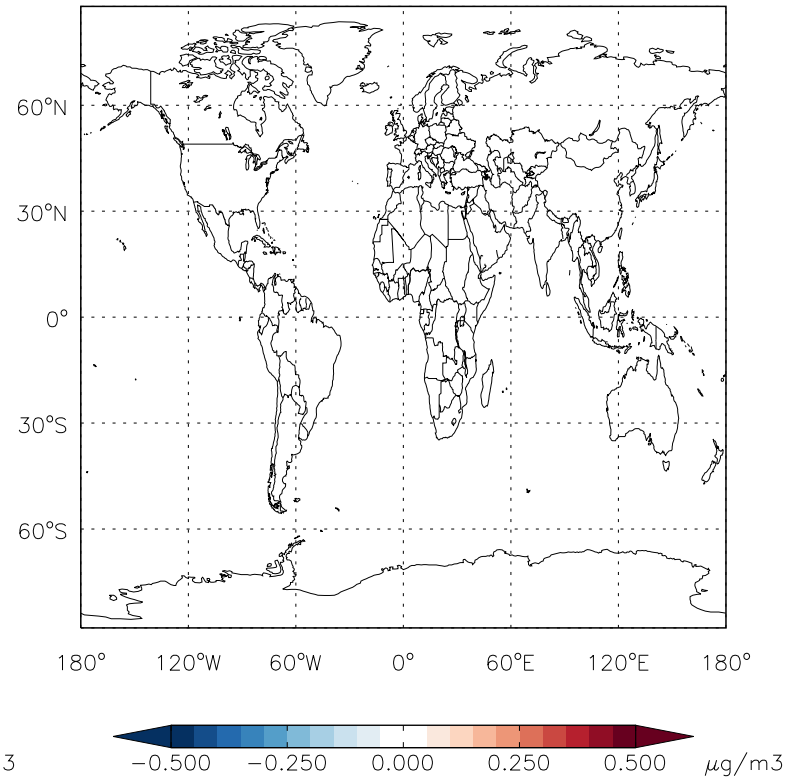
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MSA − Diff @ Surface for Jul



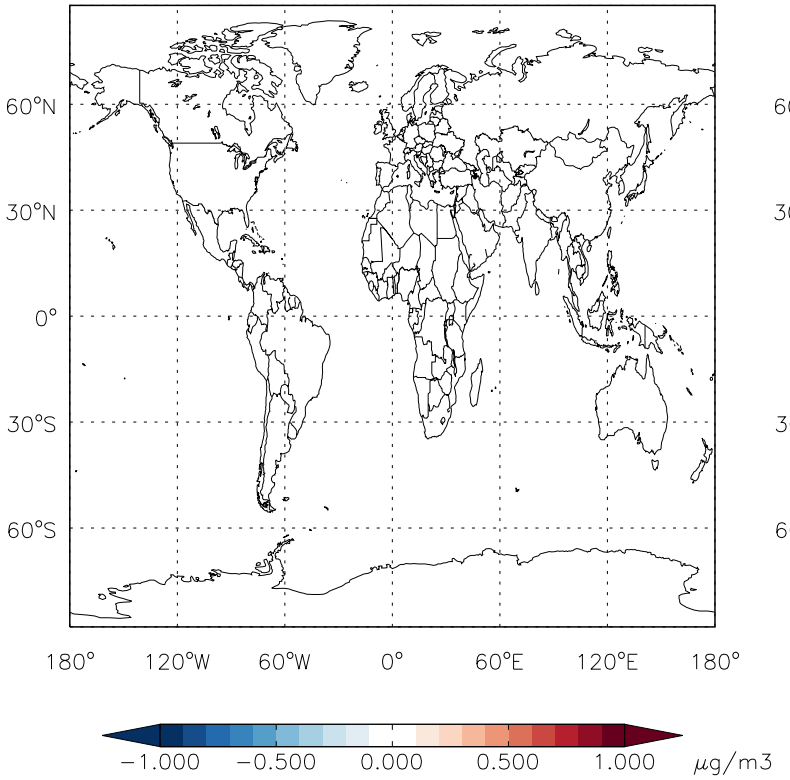
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MSA− Diff @ 500 hPa for Jul



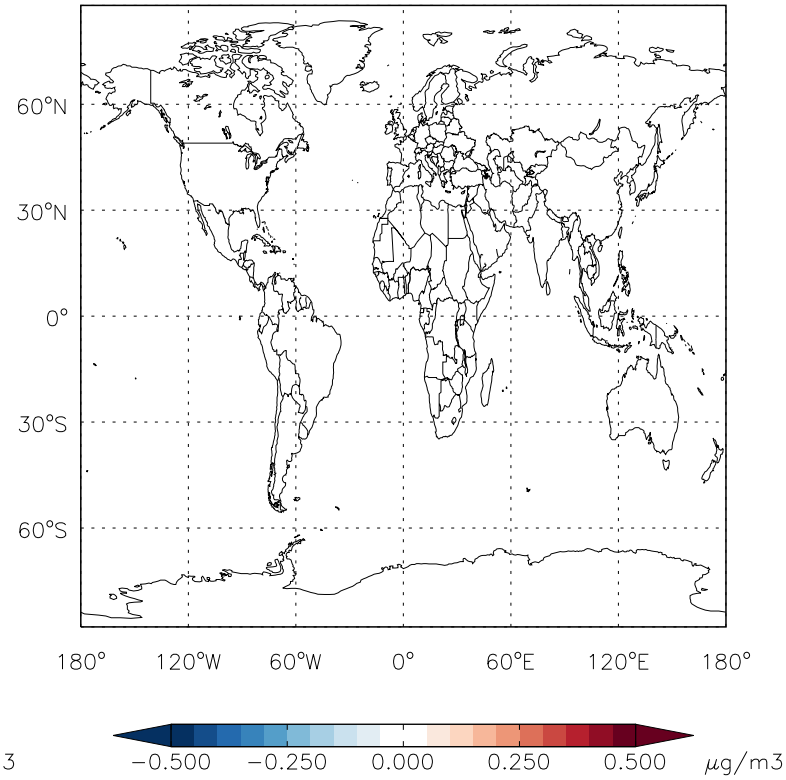
v11−01f−merra2−Run0 − v11−01d−Run1

MSA − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

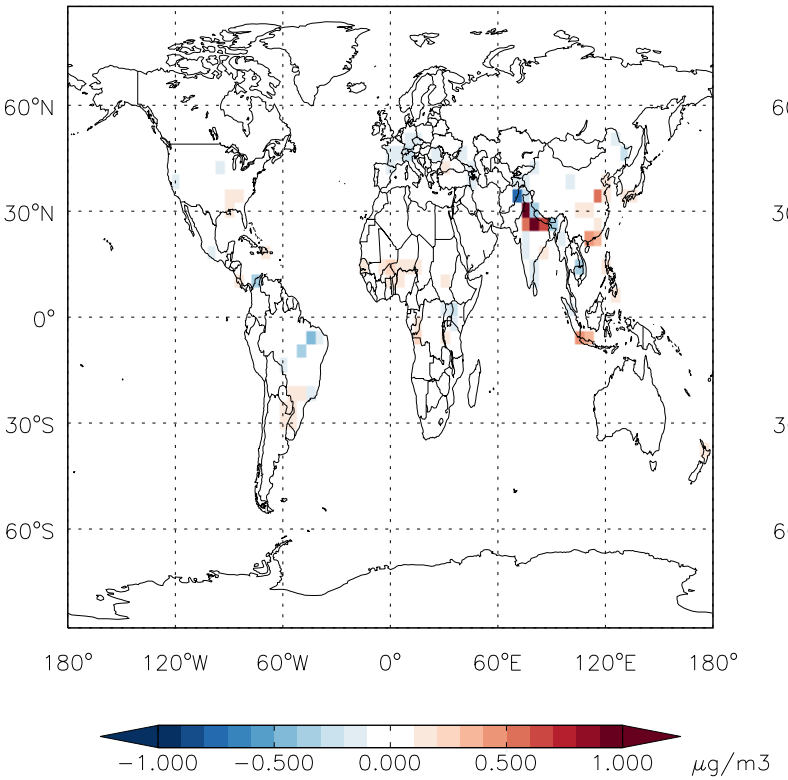
MSA− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

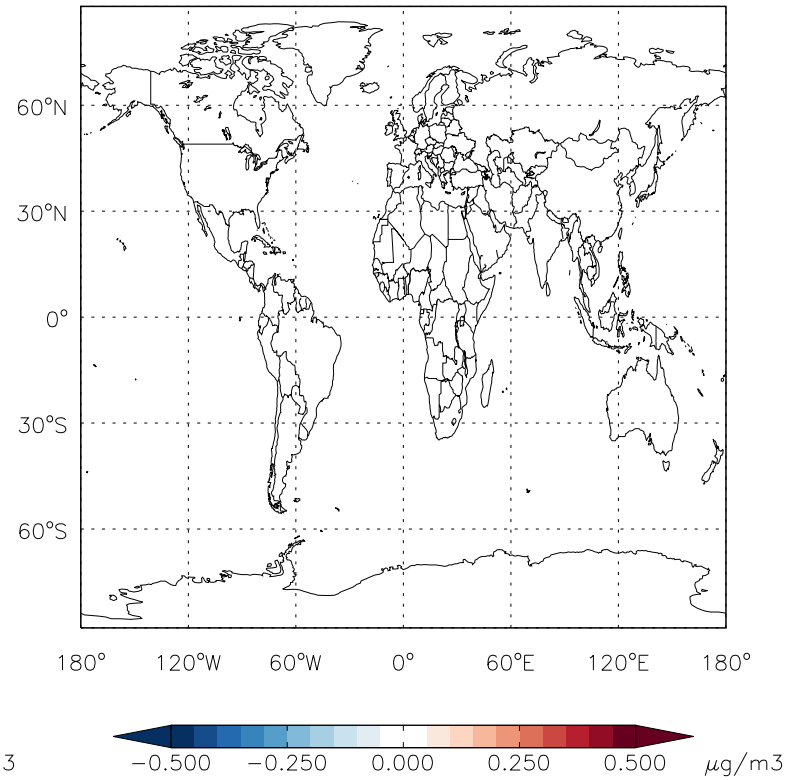
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NH3 − Diff @ Surface for Jul



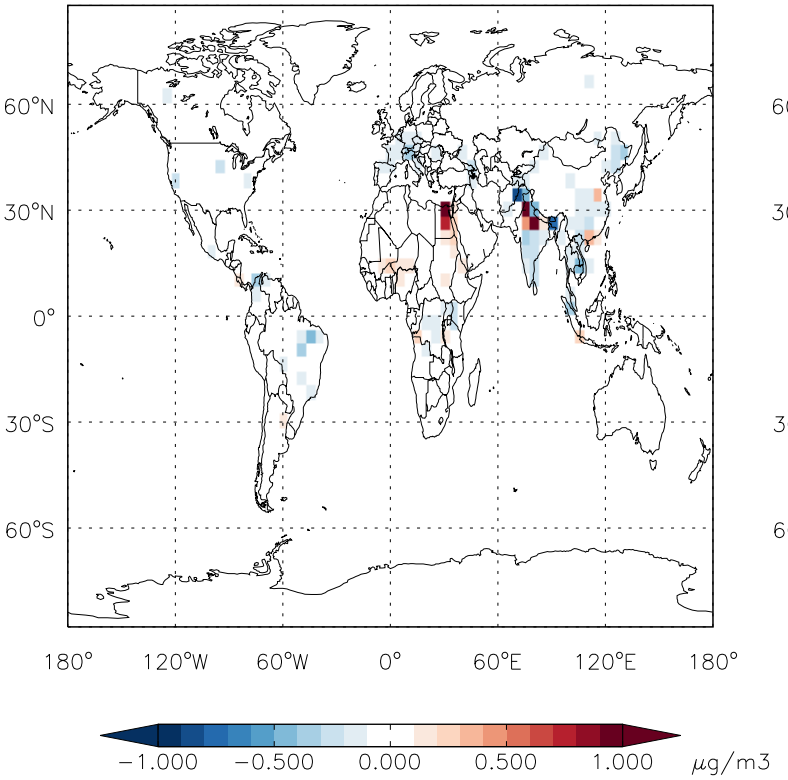
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NH3− Diff @ 500 hPa for Jul



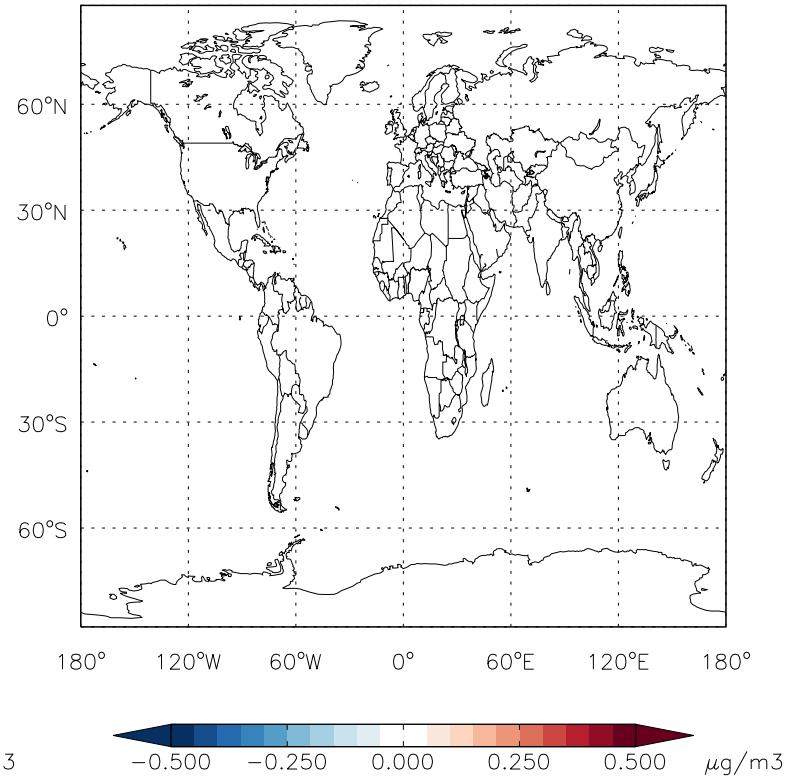
v11−01f−merra2−Run0 − v11−01d−Run1

NH3 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

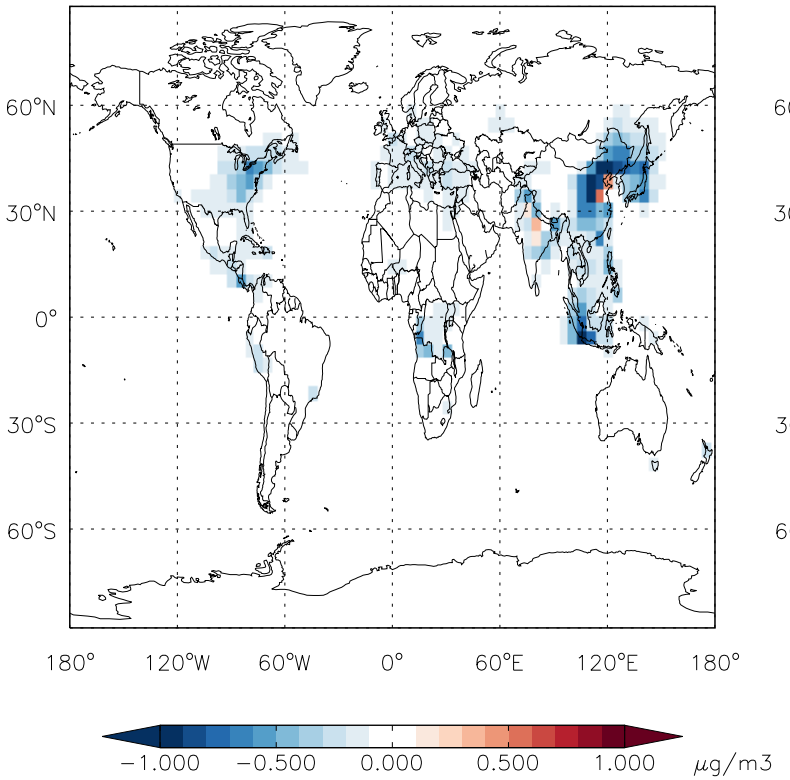
NH3− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

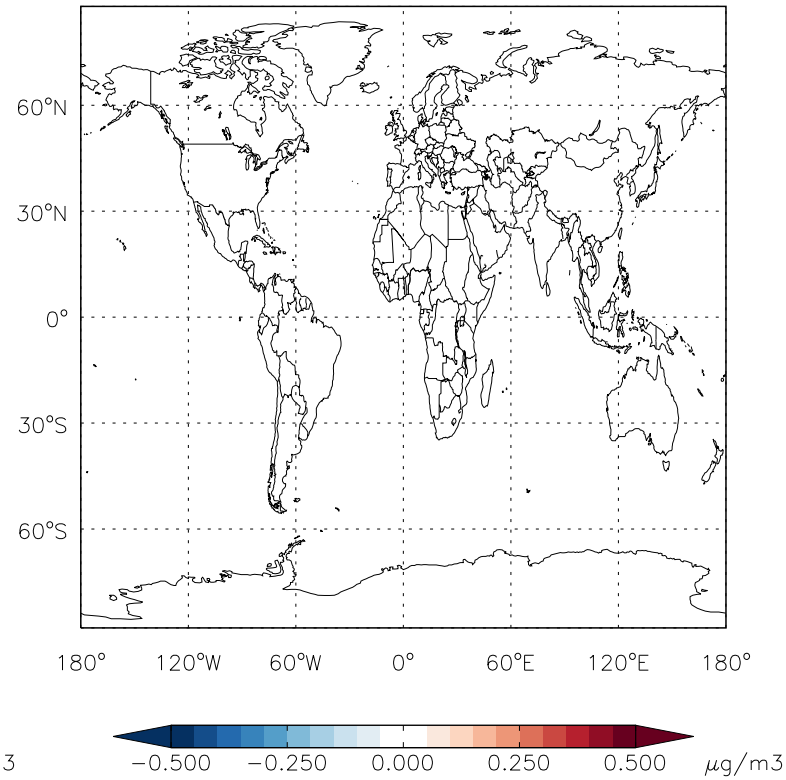
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NH4 − Diff @ Surface for Jul



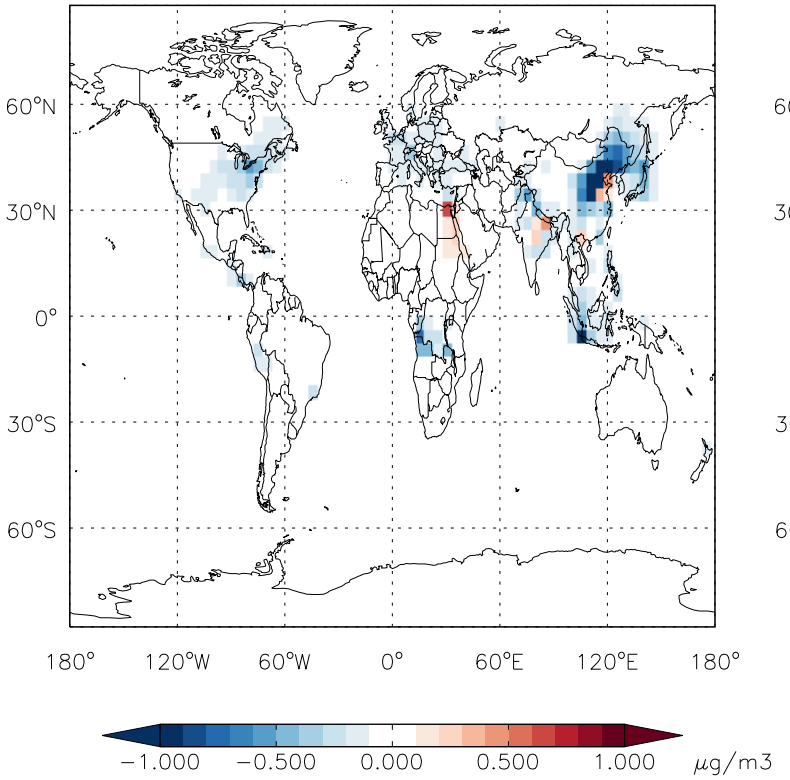
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NH4− Diff @ 500 hPa for Jul



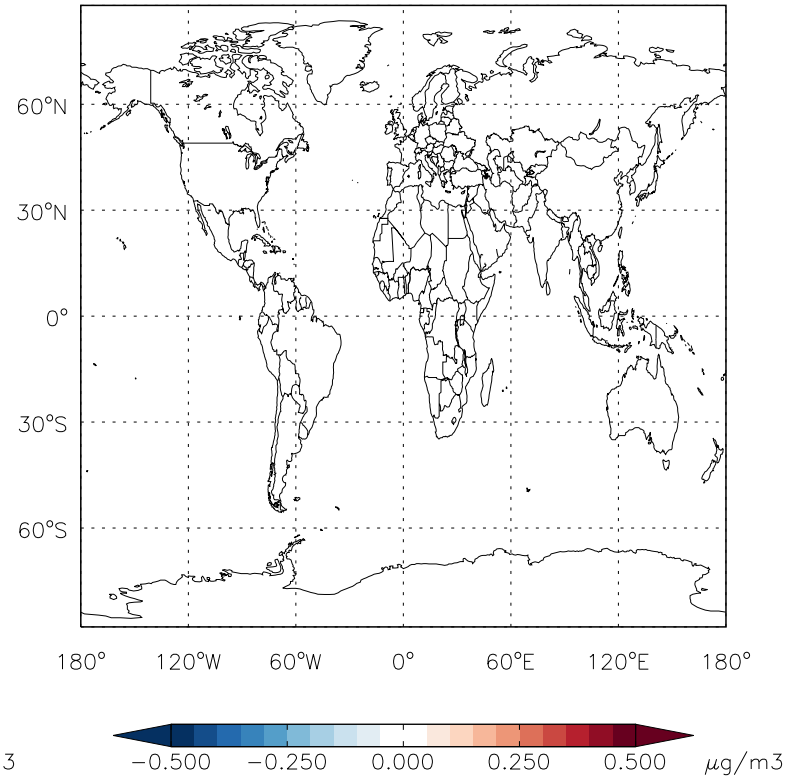
v11−01f−merra2−Run0 − v11−01d−Run1

NH4 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

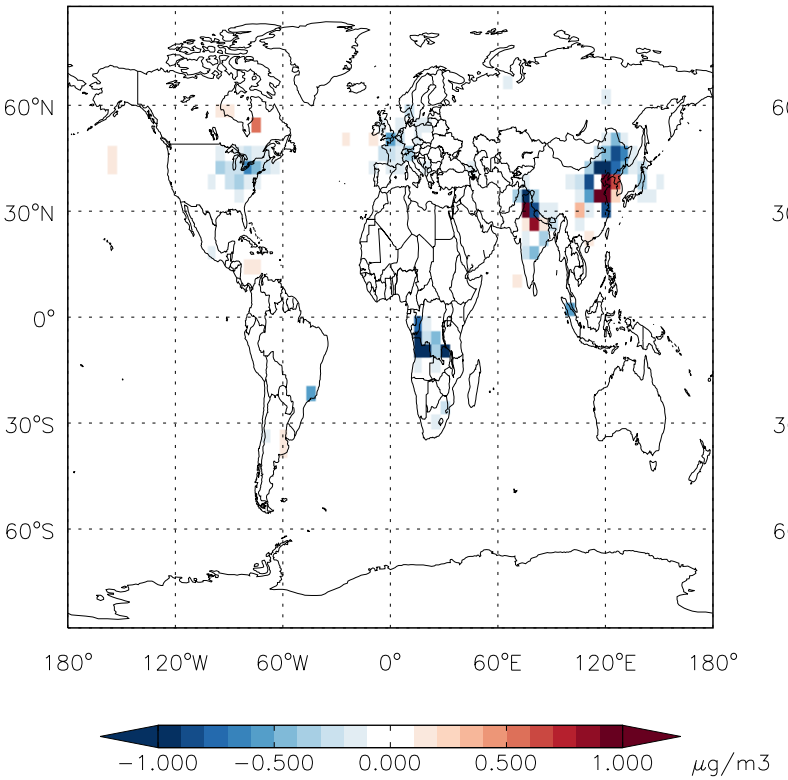
NH4− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

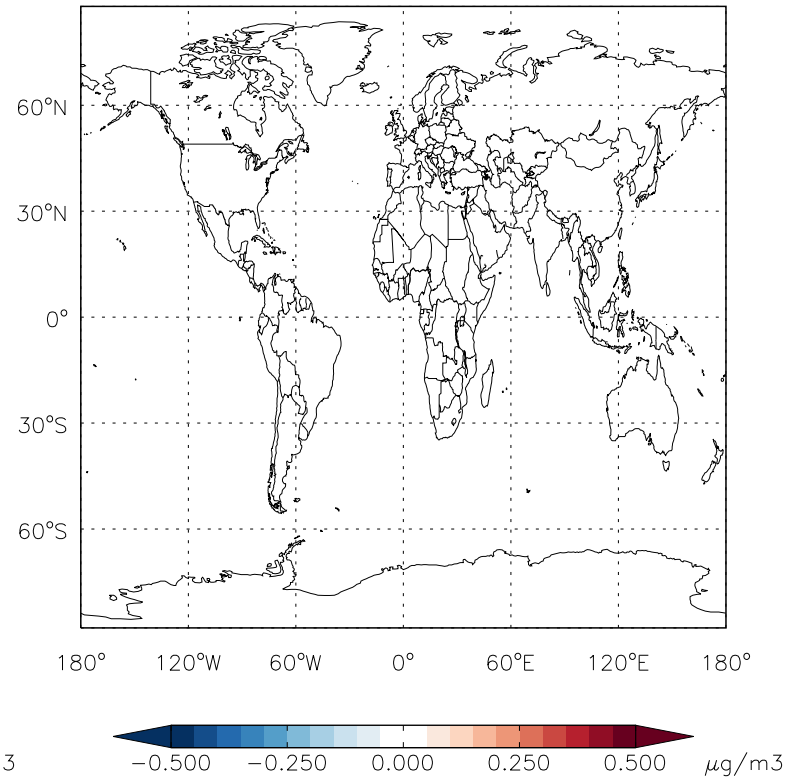
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NIT − Diff @ Surface for Jul



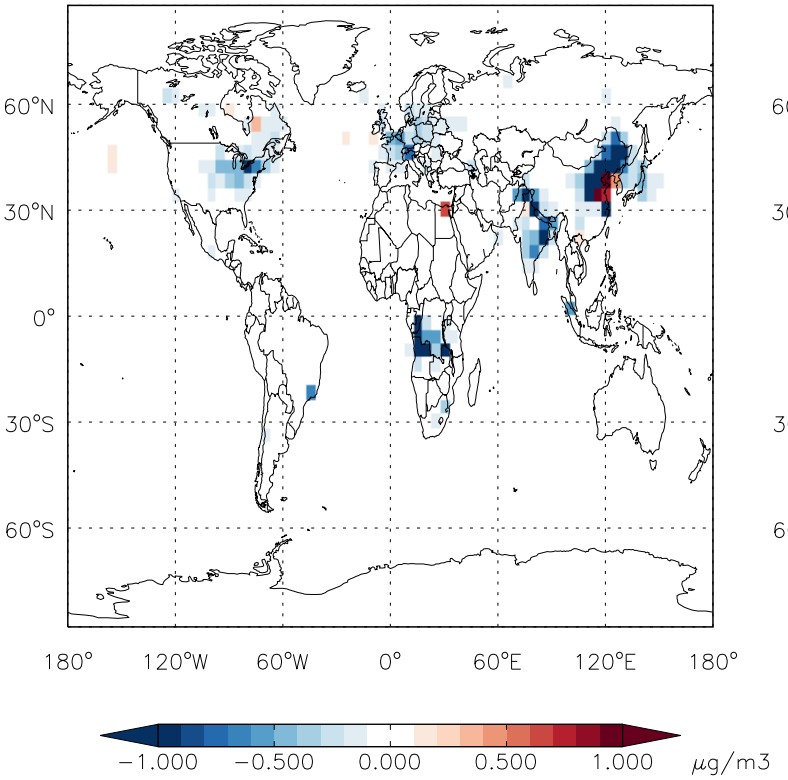
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NIT− Diff @ 500 hPa for Jul



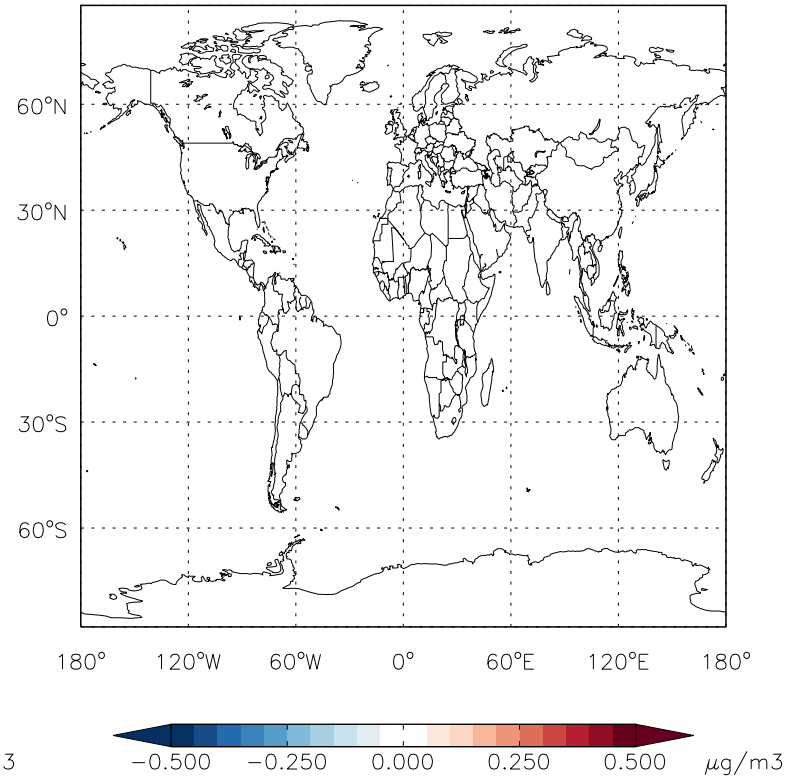
v11−01f−merra2−Run0 − v11−01d−Run1

NIT − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

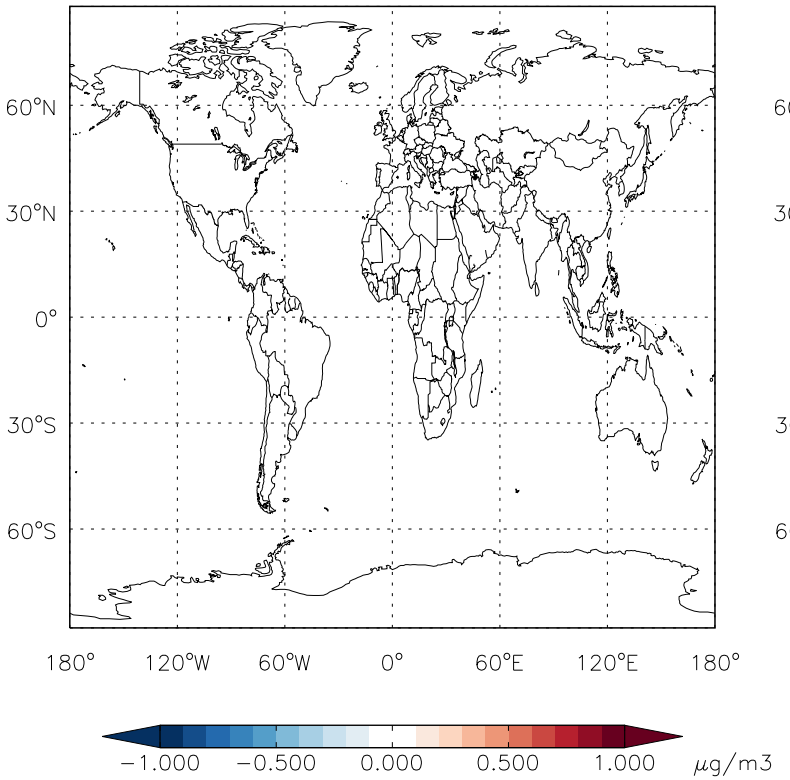
NIT− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

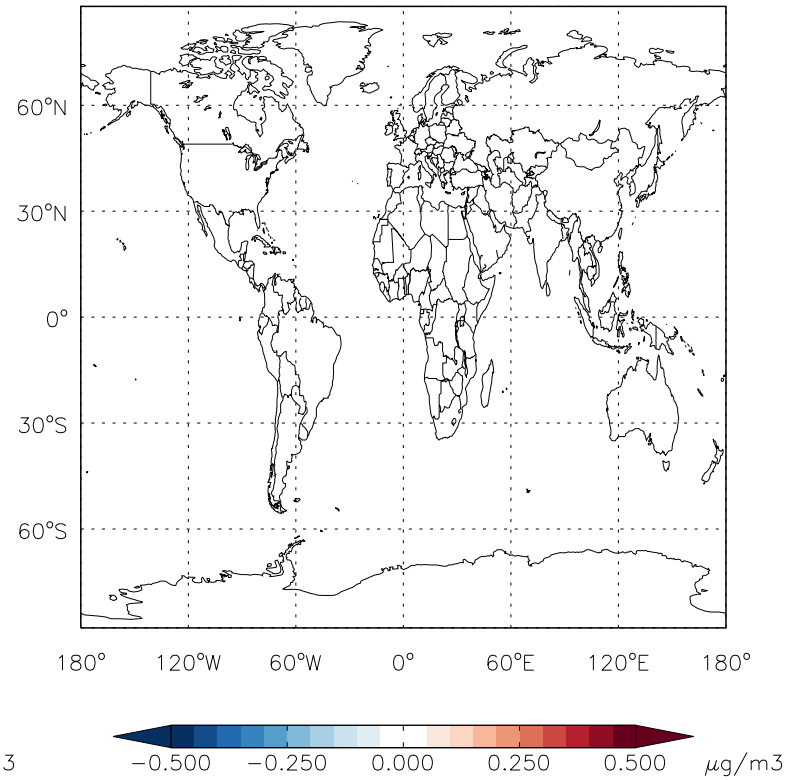
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NITs − Diff @ Surface for Jul



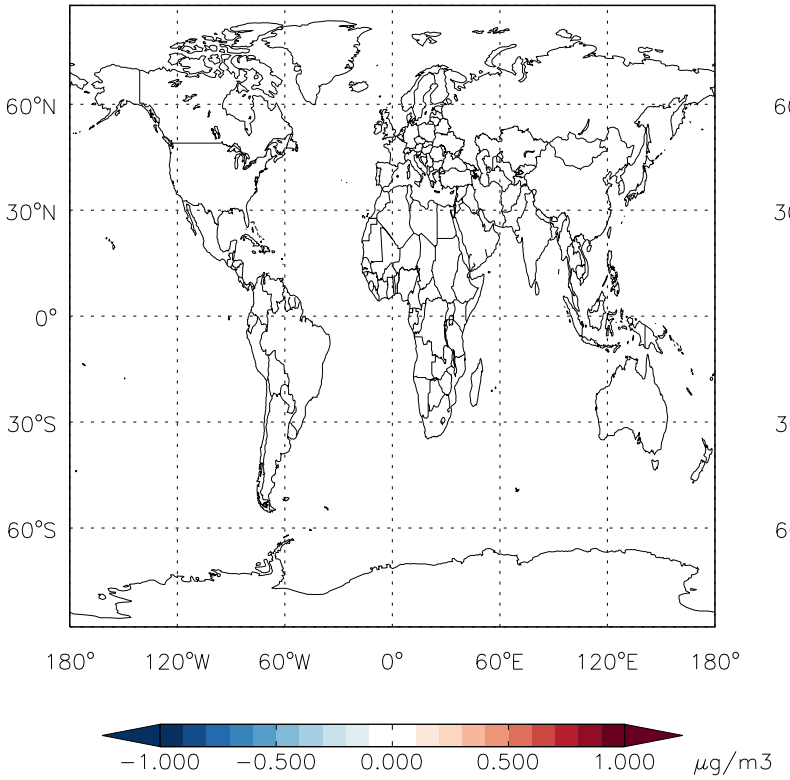
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NITs− Diff @ 500 hPa for Jul



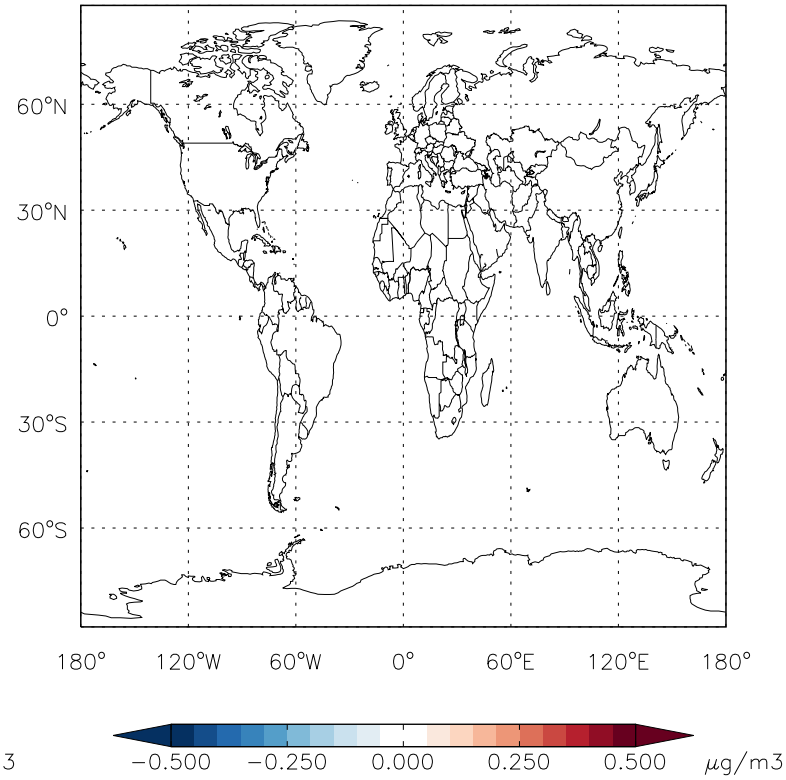
v11−01f−merra2−Run0 − v11−01d−Run1

NITs − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

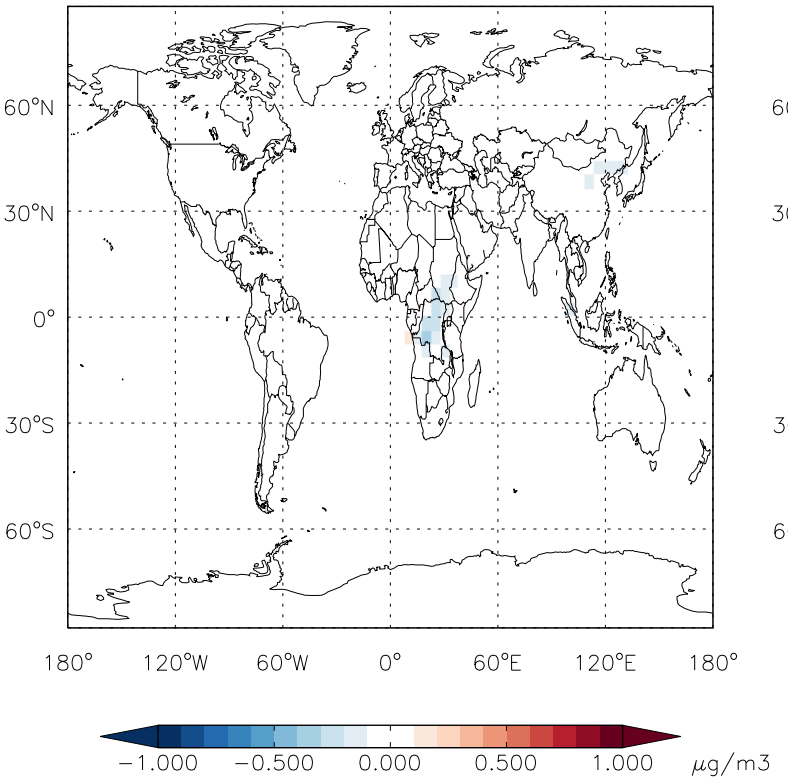
NITs− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

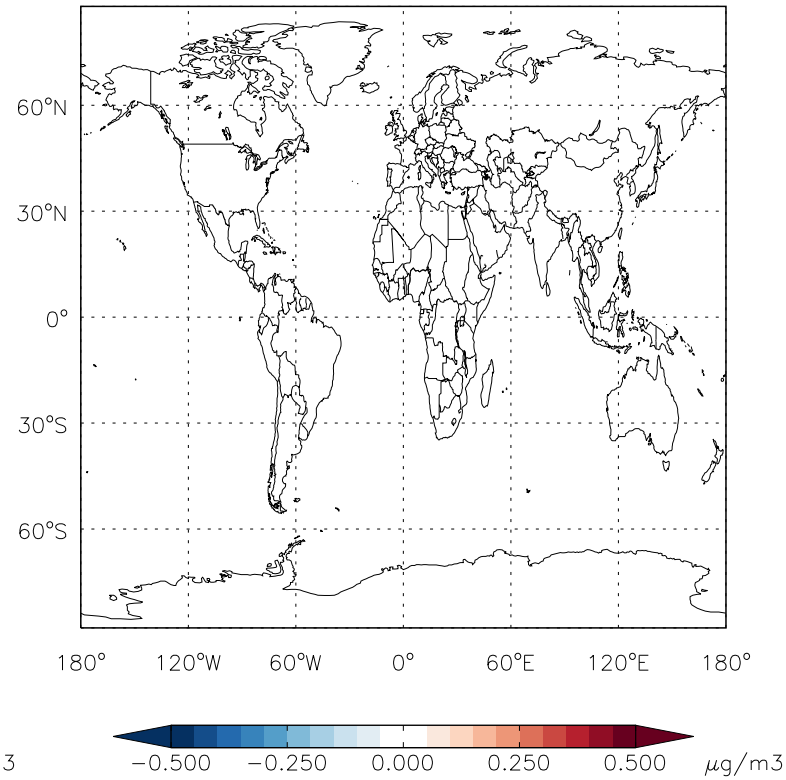
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

BCPI − Diff @ Surface for Jul



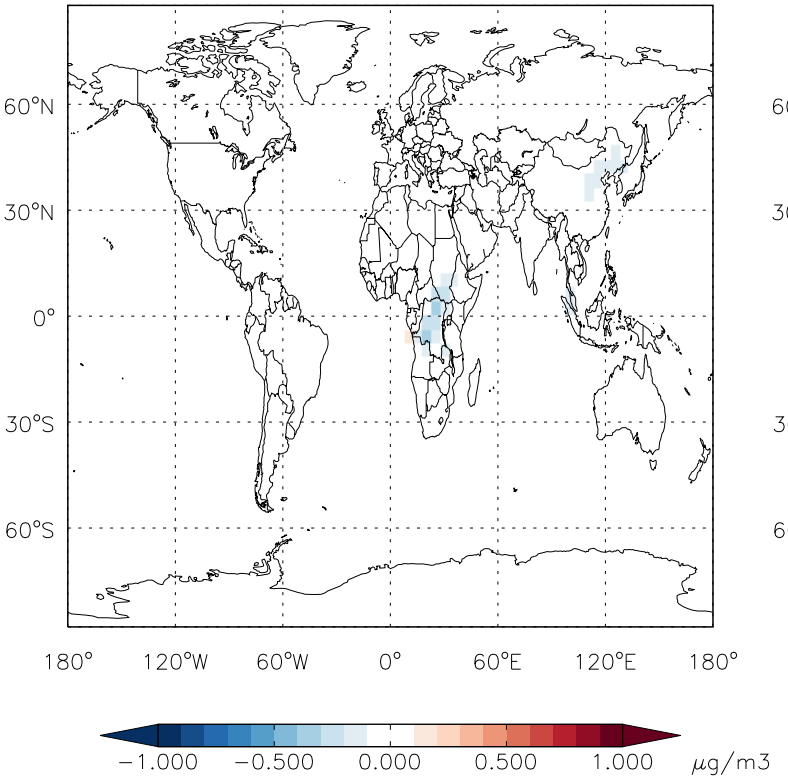
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

BCPI− Diff @ 500 hPa for Jul



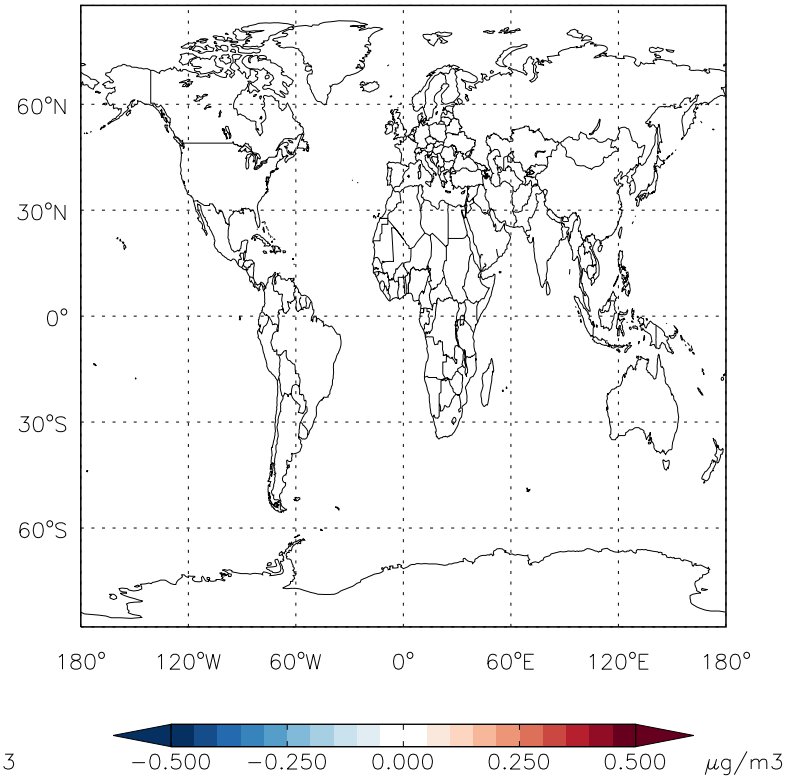
v11−01f−merra2−Run0 − v11−01d−Run1

BCPI − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

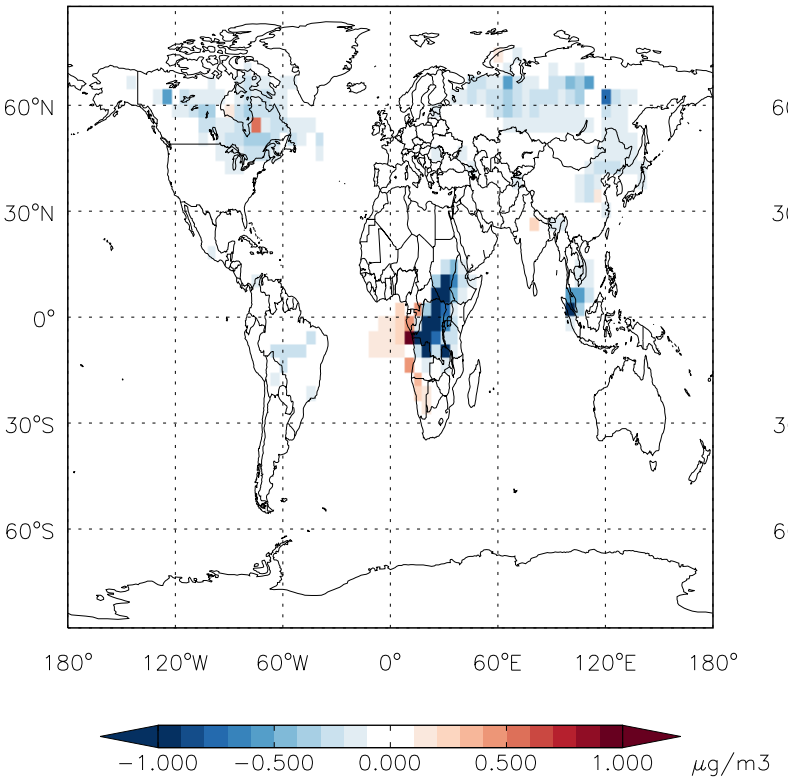
BCPI− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

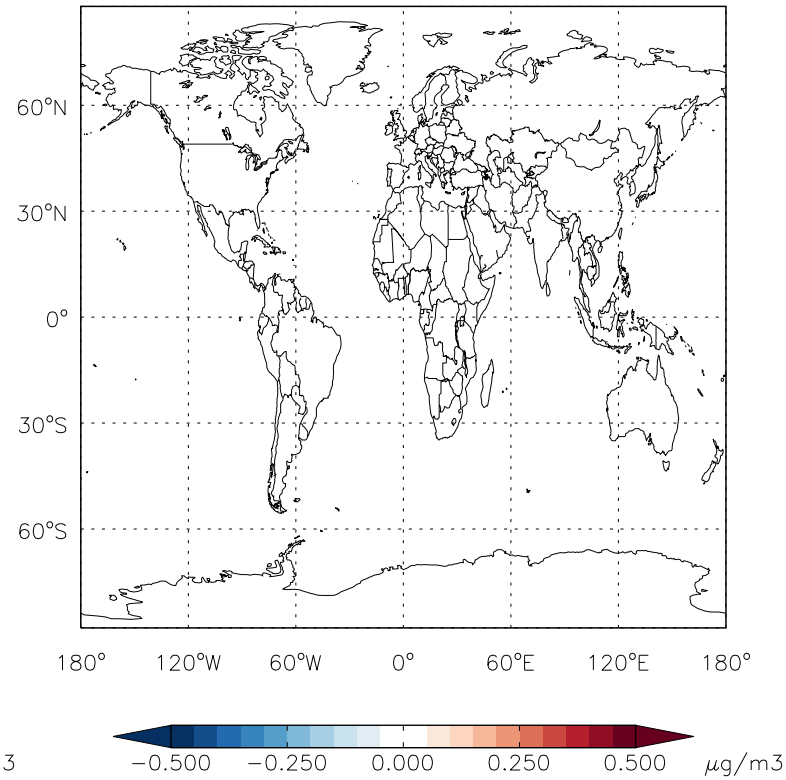
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

OCPI − Diff @ Surface for Jul



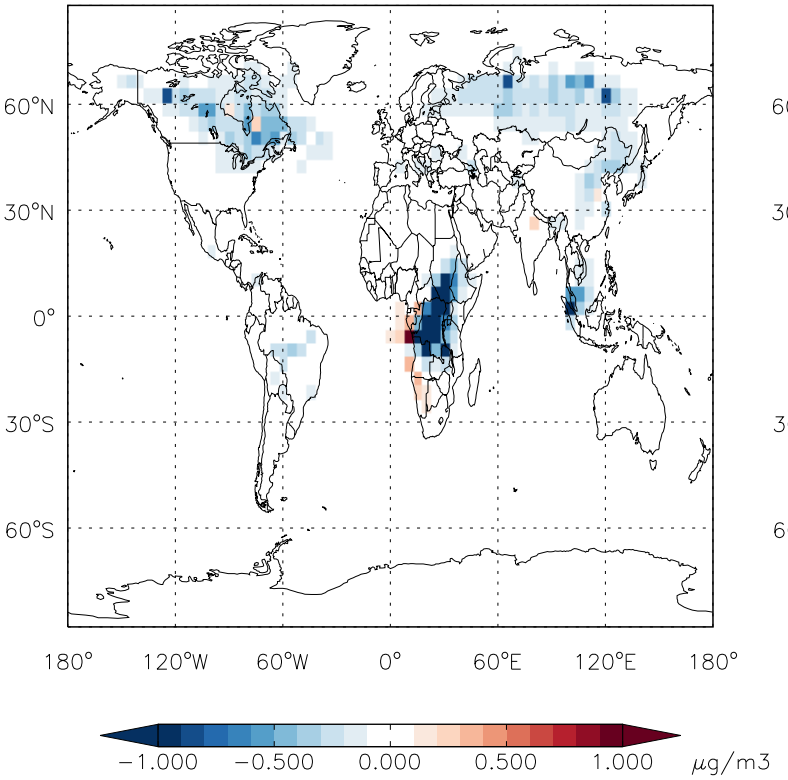
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

OCPI− Diff @ 500 hPa for Jul



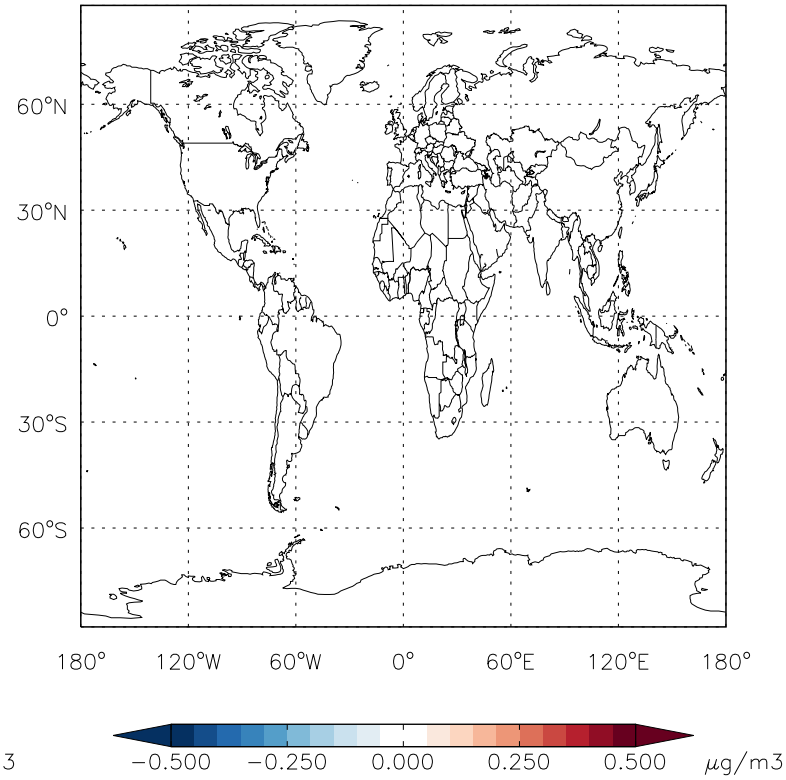
v11−01f−merra2−Run0 − v11−01d−Run1

OCPI − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

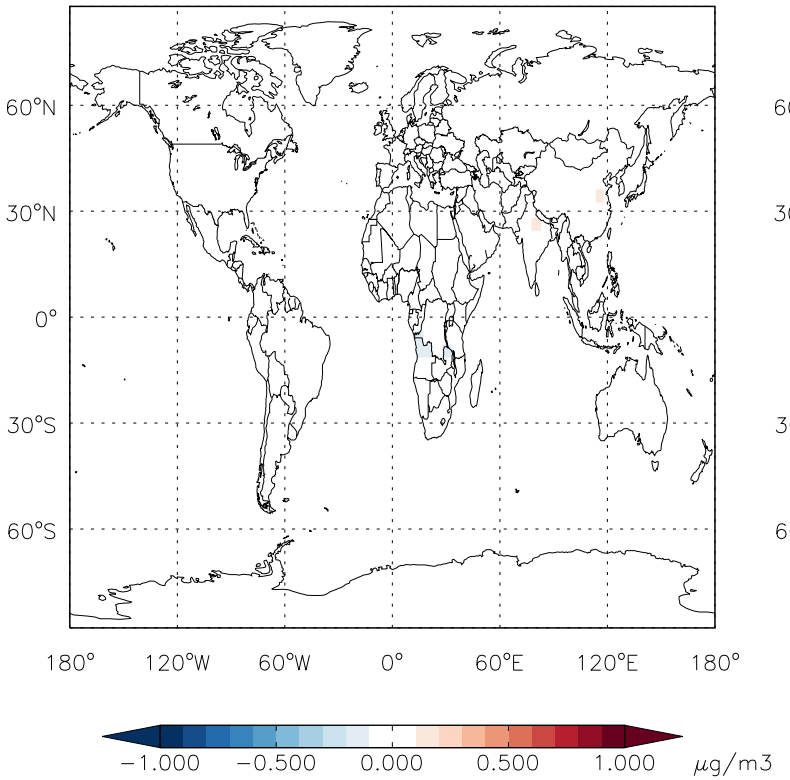
OCPI− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

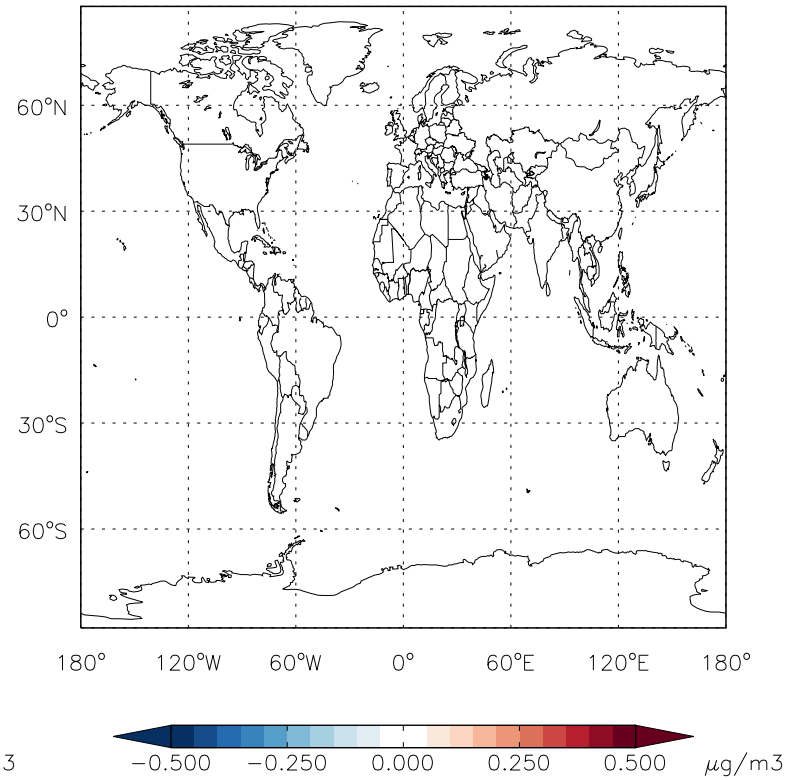
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BCPO - Diff @ Surface for Jul



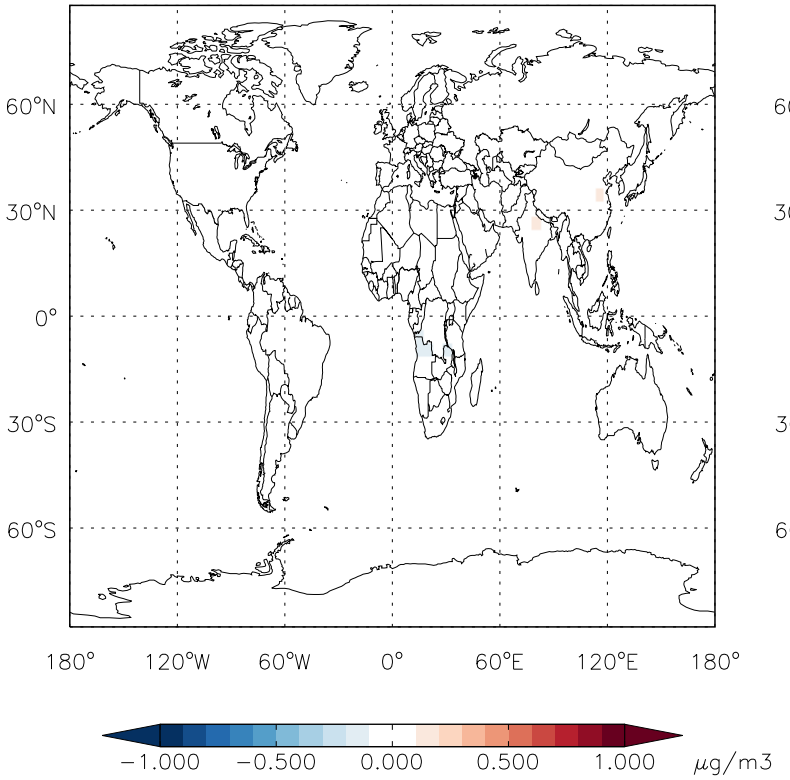
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BCPO- Diff @ 500 hPa for Jul



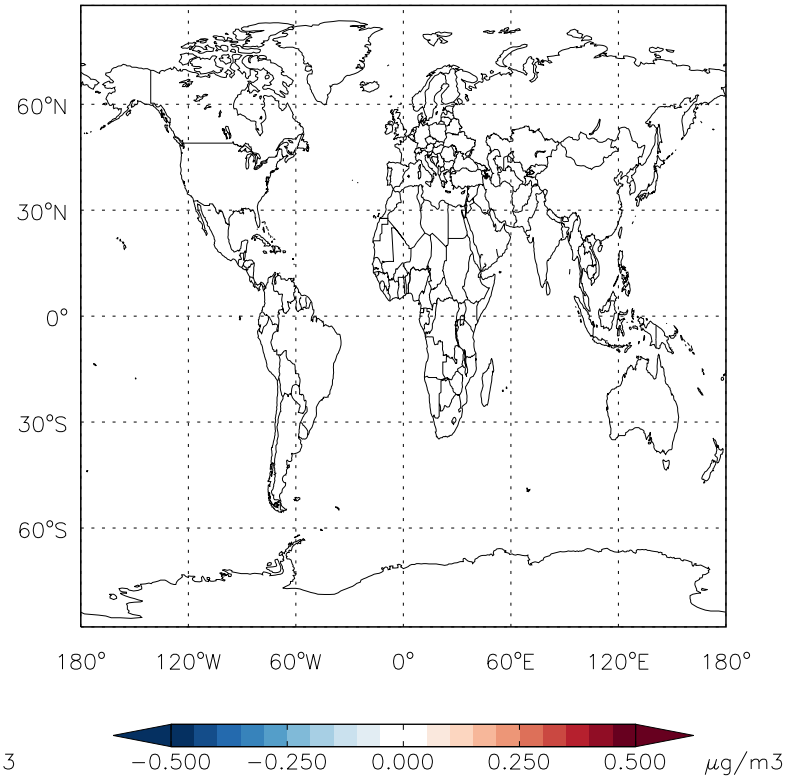
v11-01f-merra2-Run0 - v11-01d-Run1

BCPO - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

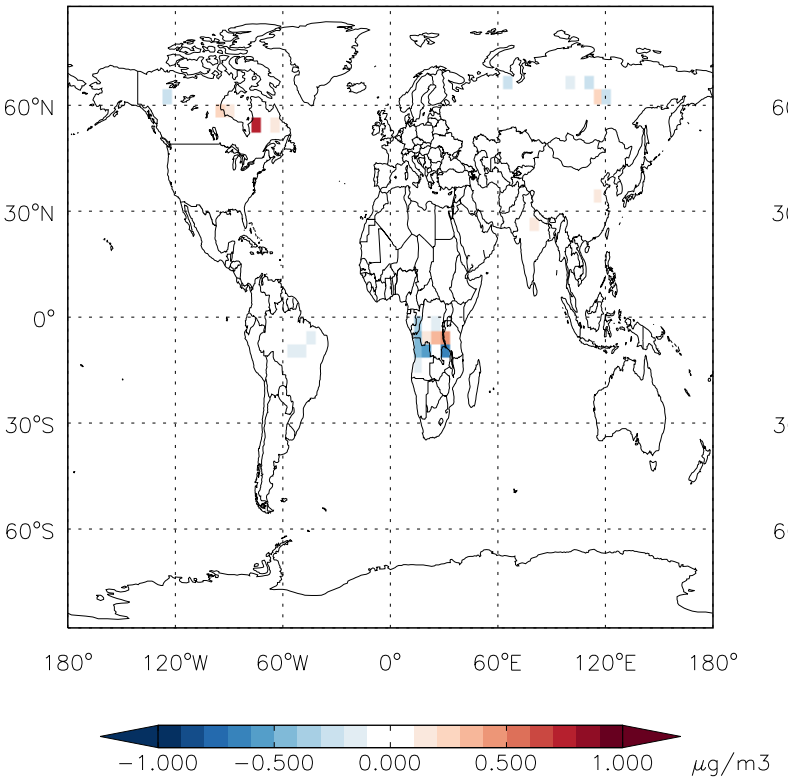
BCPO- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

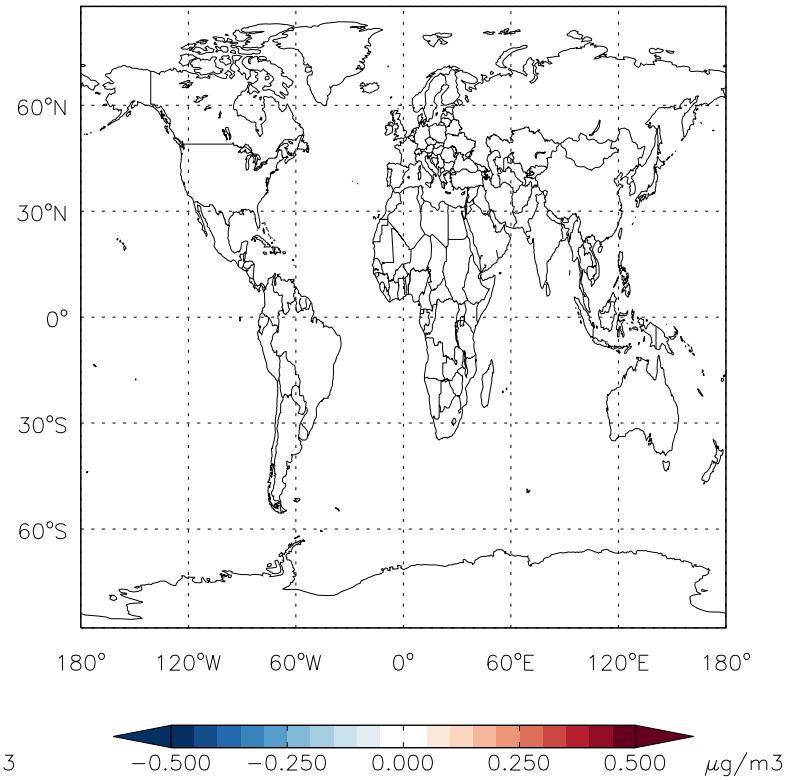
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

OCPO - Diff @ Surface for Jul



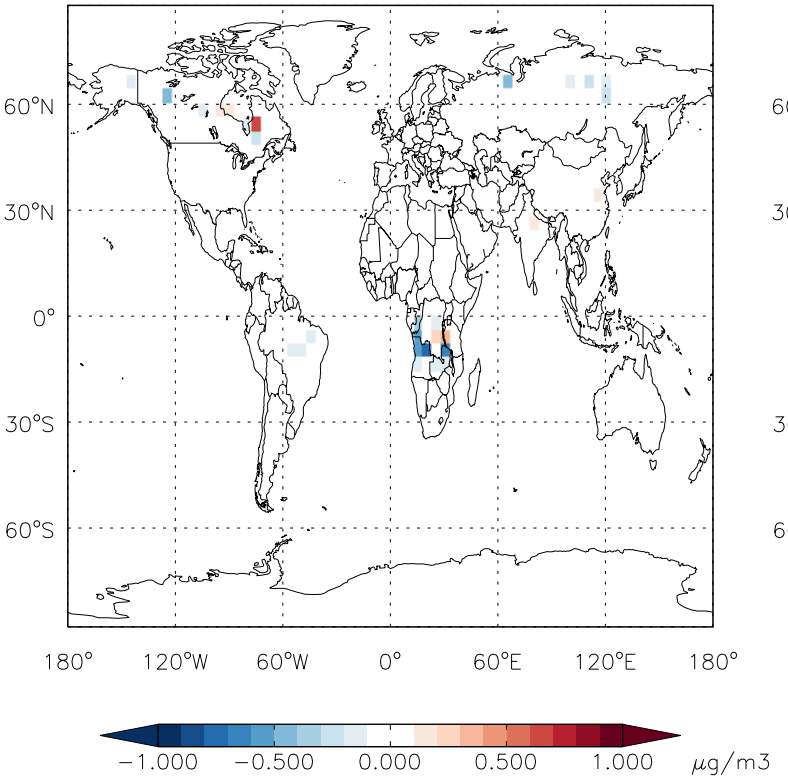
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

OCPO- Diff @ 500 hPa for Jul



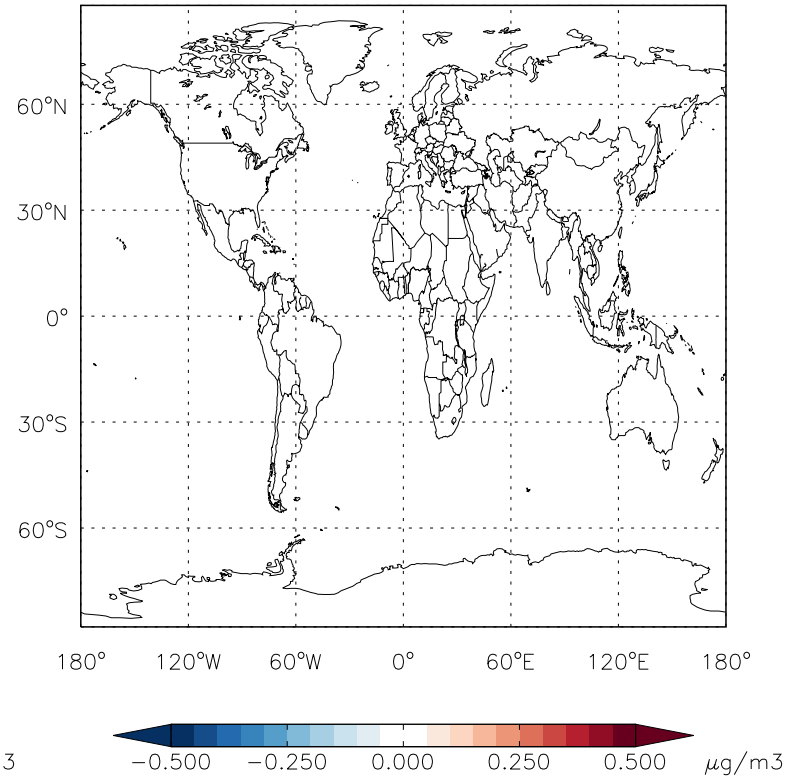
v11-01f-merra2-Run0 - v11-01d-Run1

OCPO - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

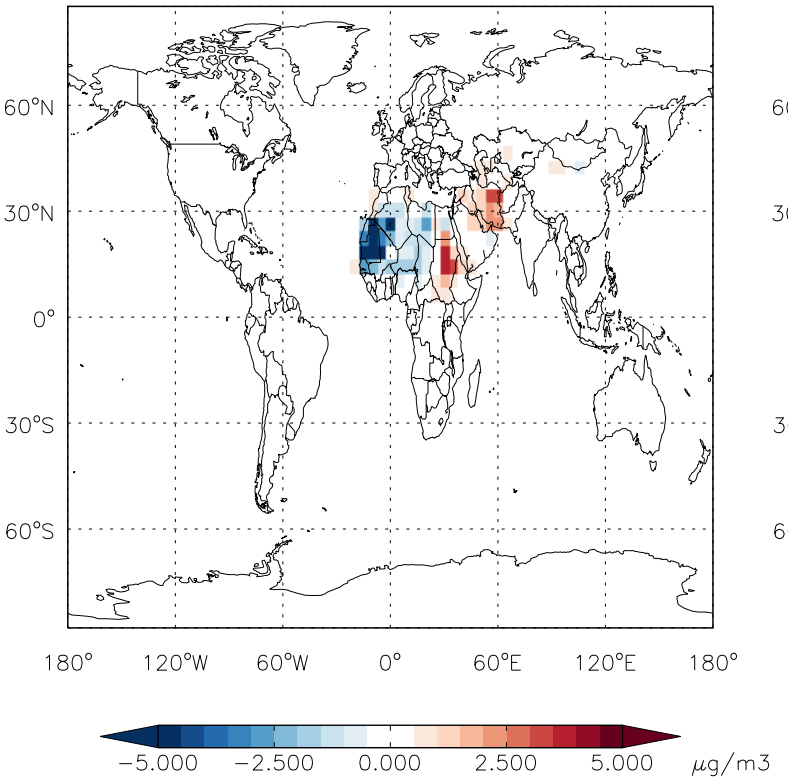
OCPO- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

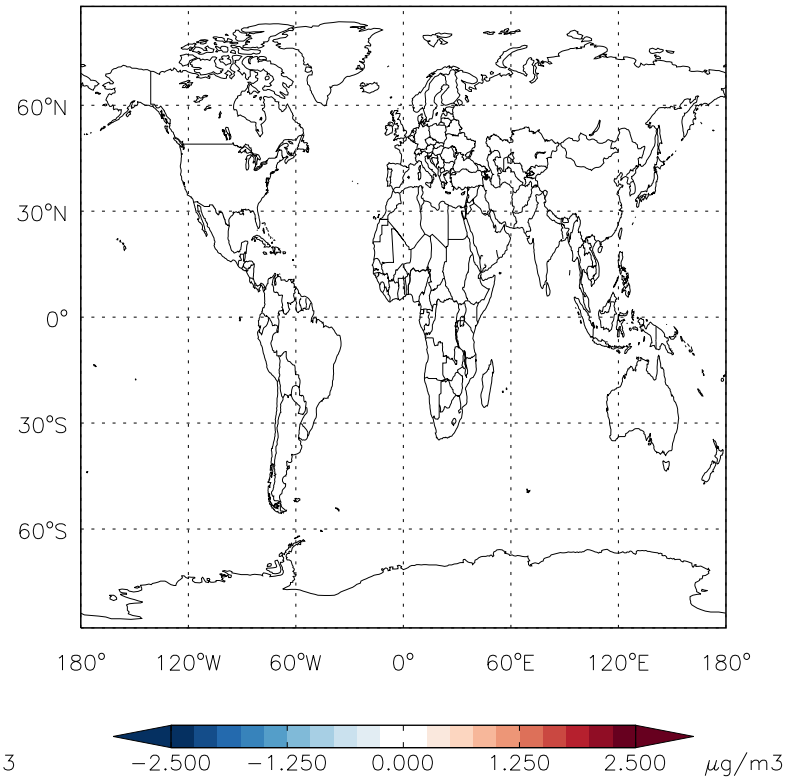
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DST1 − Diff @ Surface for Jul



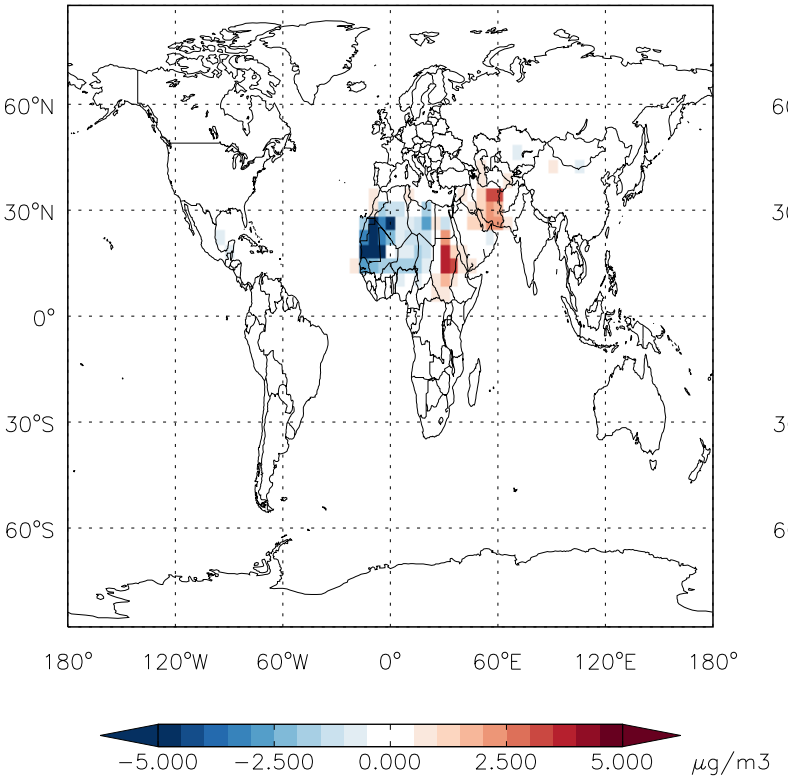
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DST1− Diff @ 500 hPa for Jul



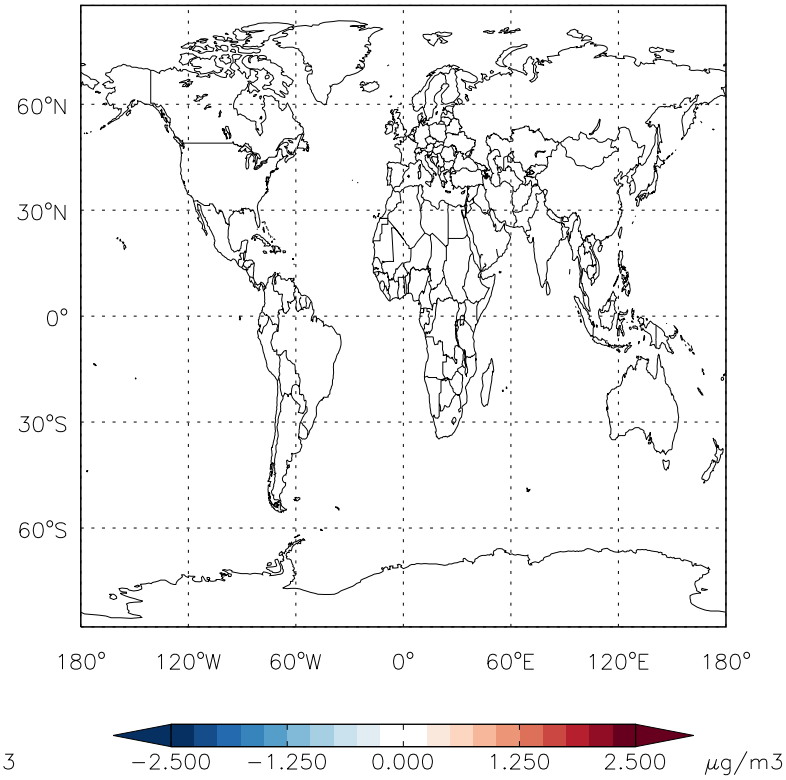
v11−01f−merra2−Run0 − v11−01d−Run1

DST1 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

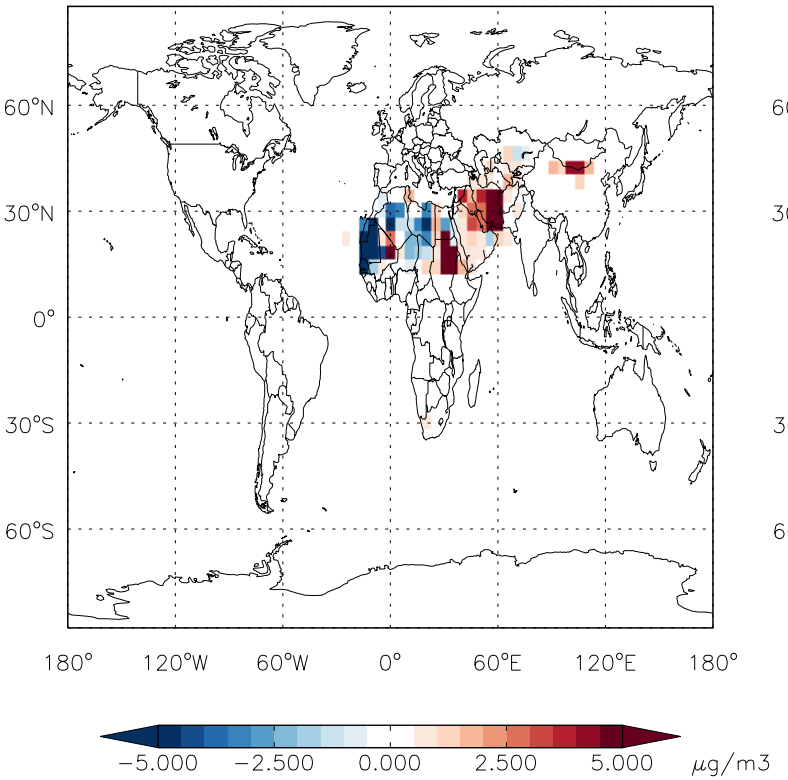
DST1− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

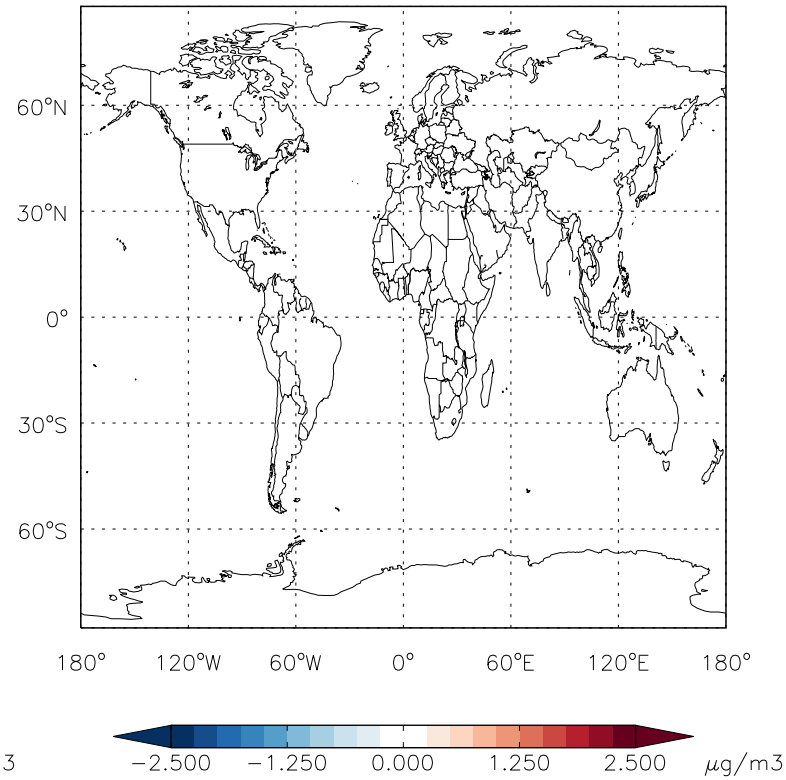
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DST2 − Diff @ Surface for Jul



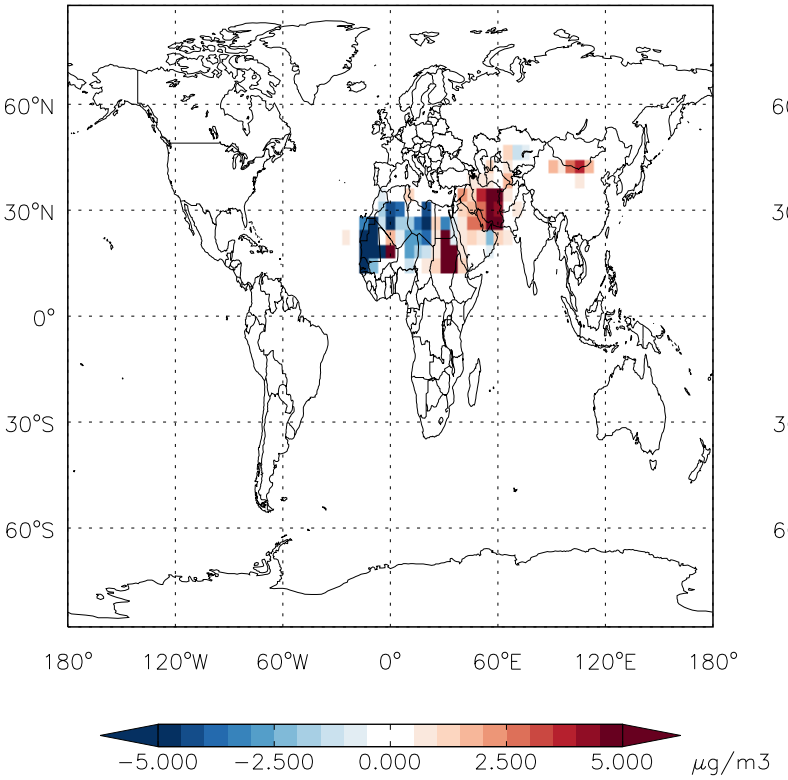
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DST2− Diff @ 500 hPa for Jul



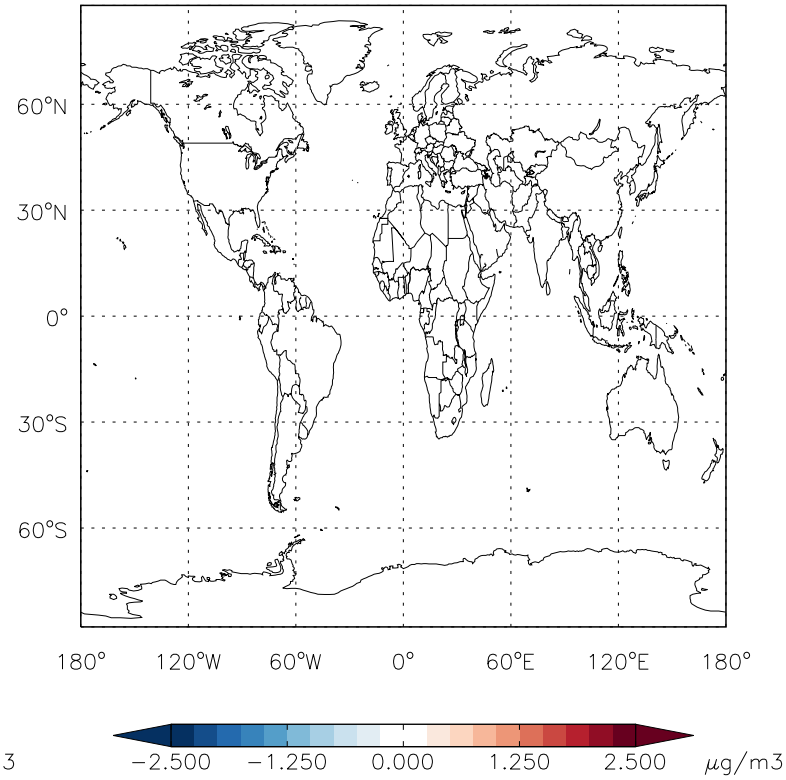
v11−01f−merra2−Run0 − v11−01d−Run1

DST2 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

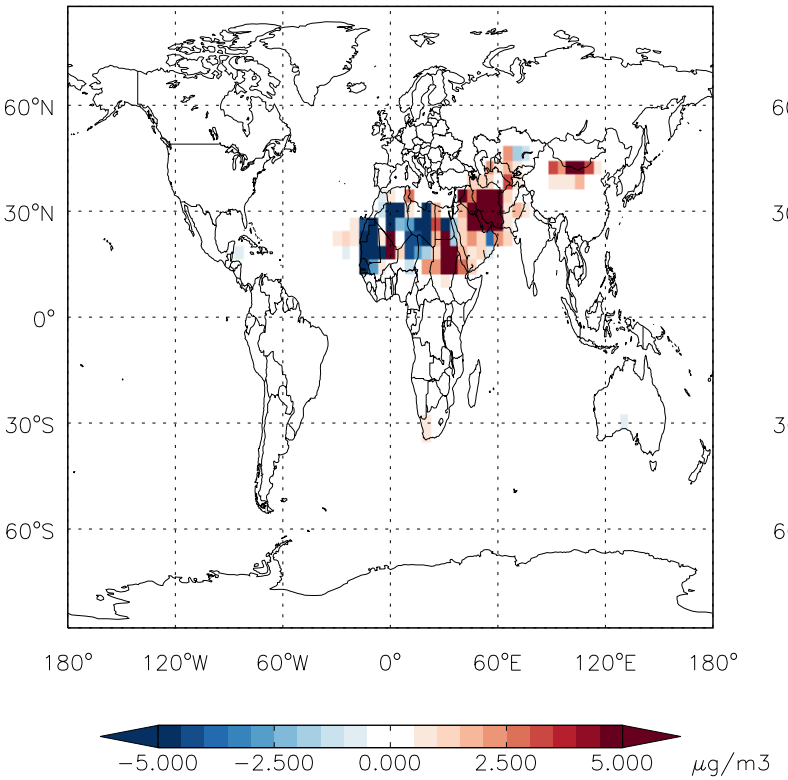
DST2− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

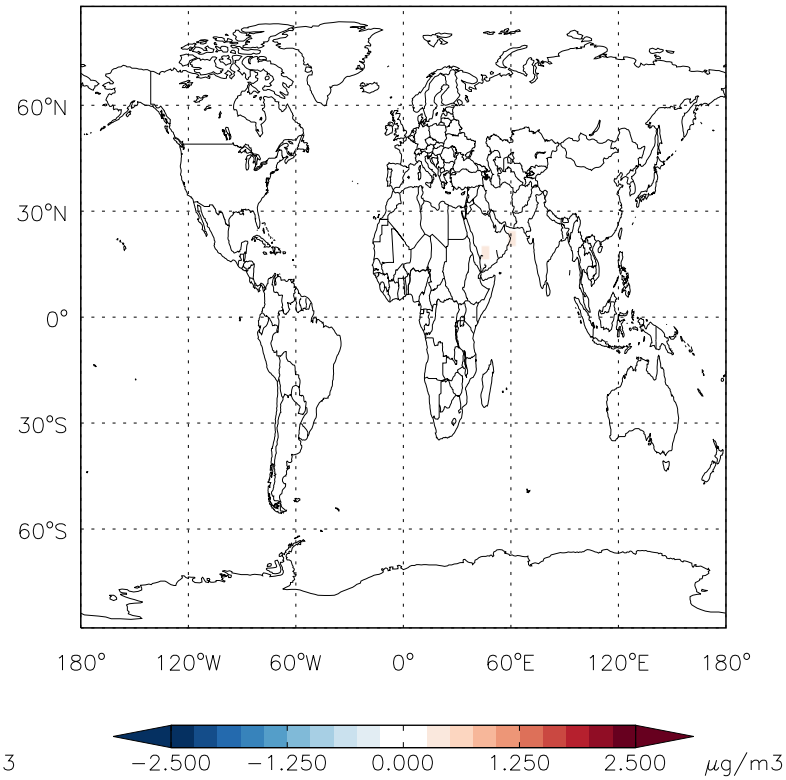
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

DST3 - Diff @ Surface for Jul



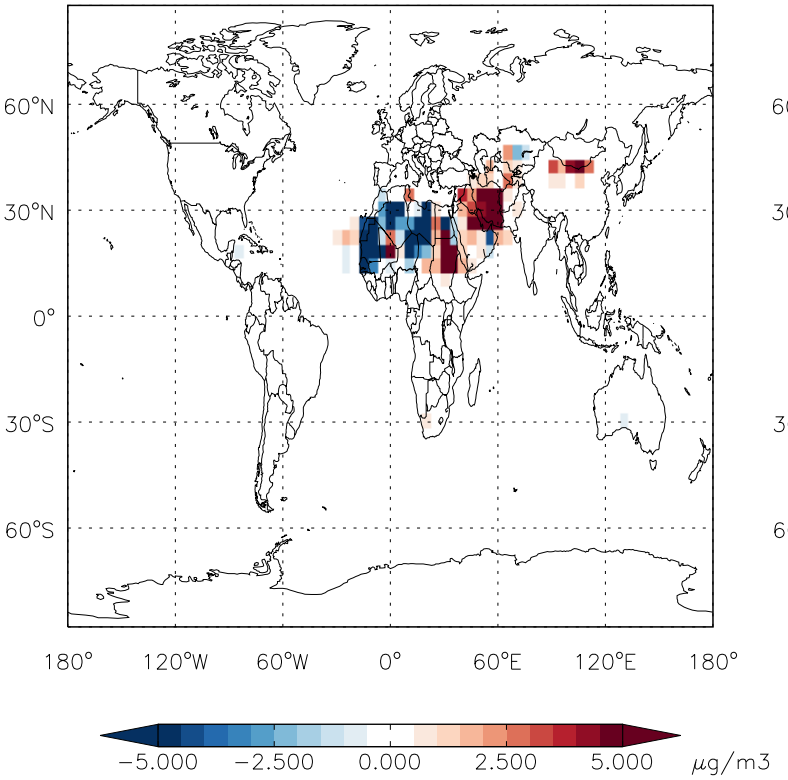
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

DST3- Diff @ 500 hPa for Jul



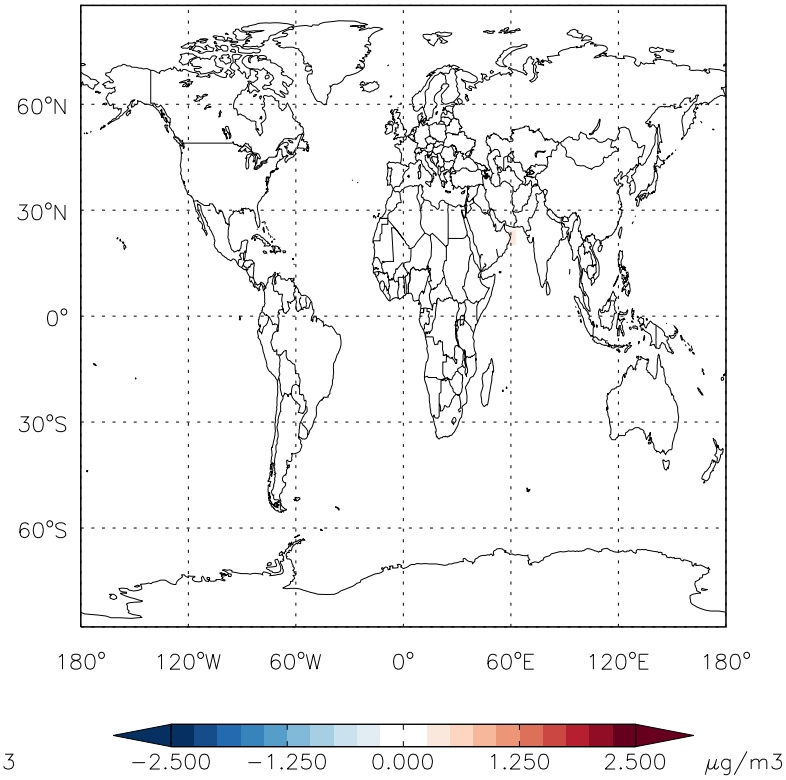
v11-01f-merra2-Run0 - v11-01d-Run1

DST3 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

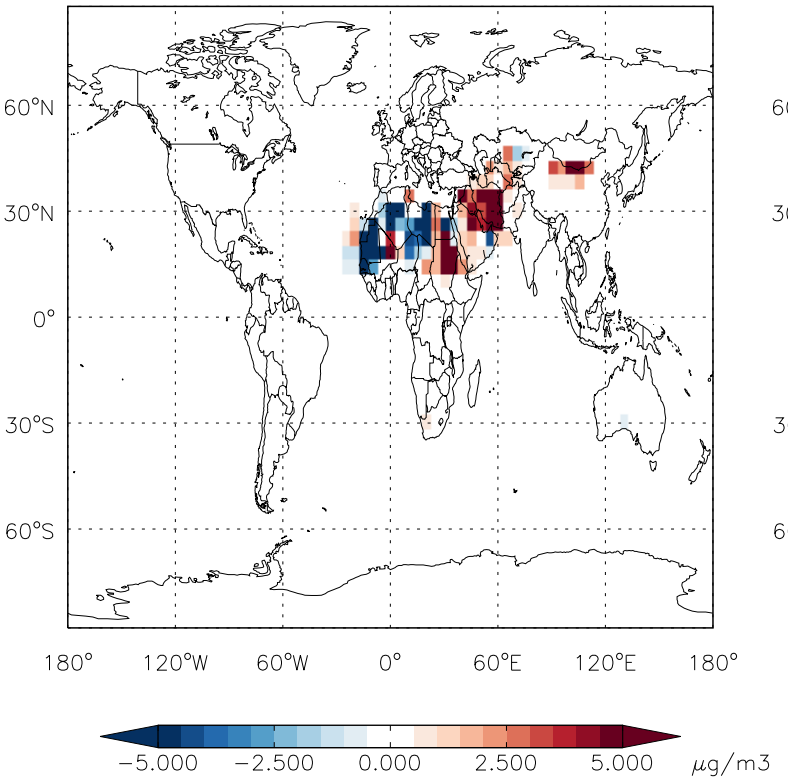
DST3- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

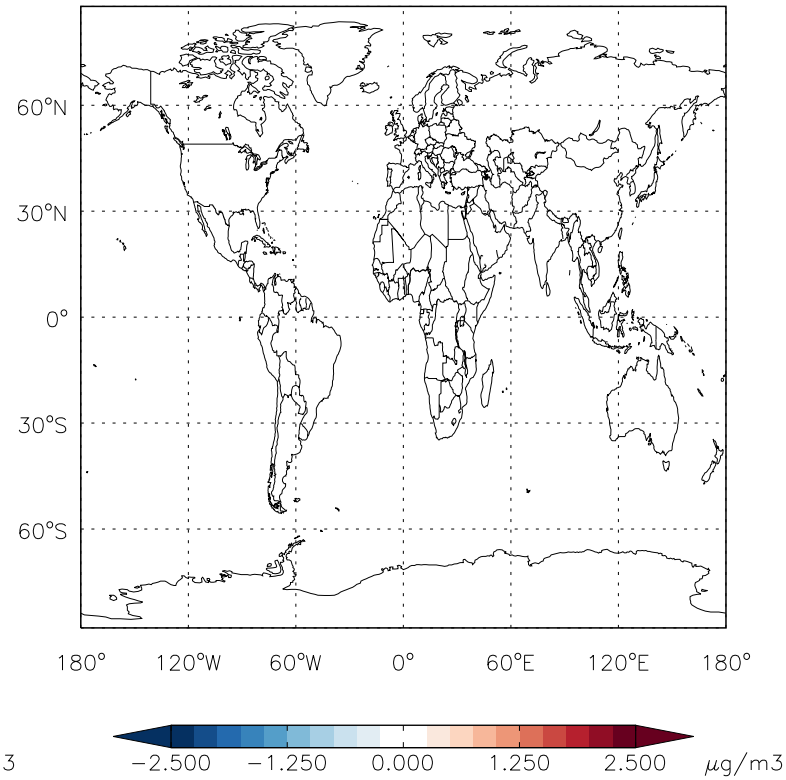
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DST4 − Diff @ Surface for Jul



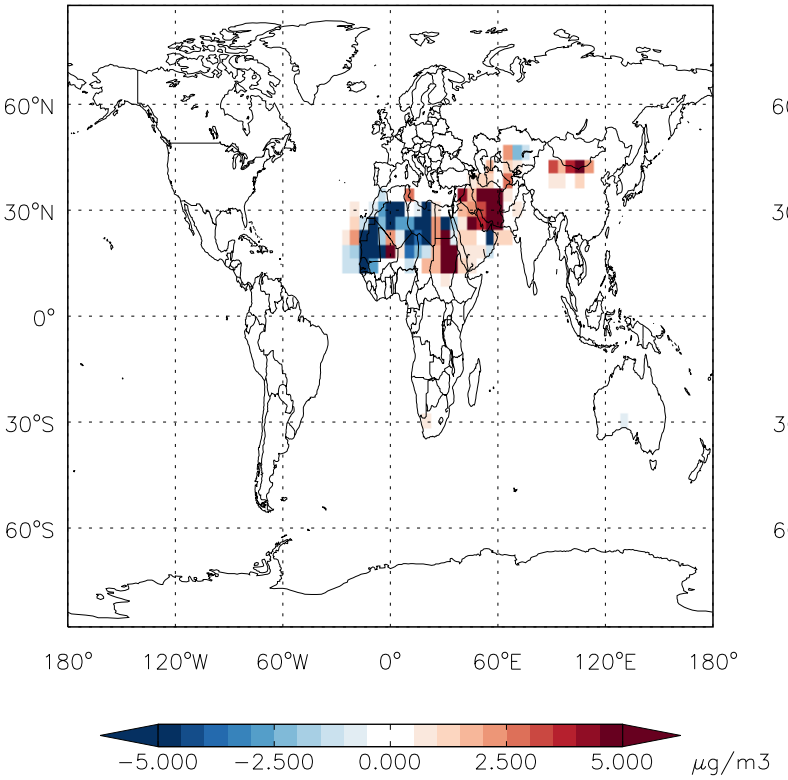
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

DST4− Diff @ 500 hPa for Jul



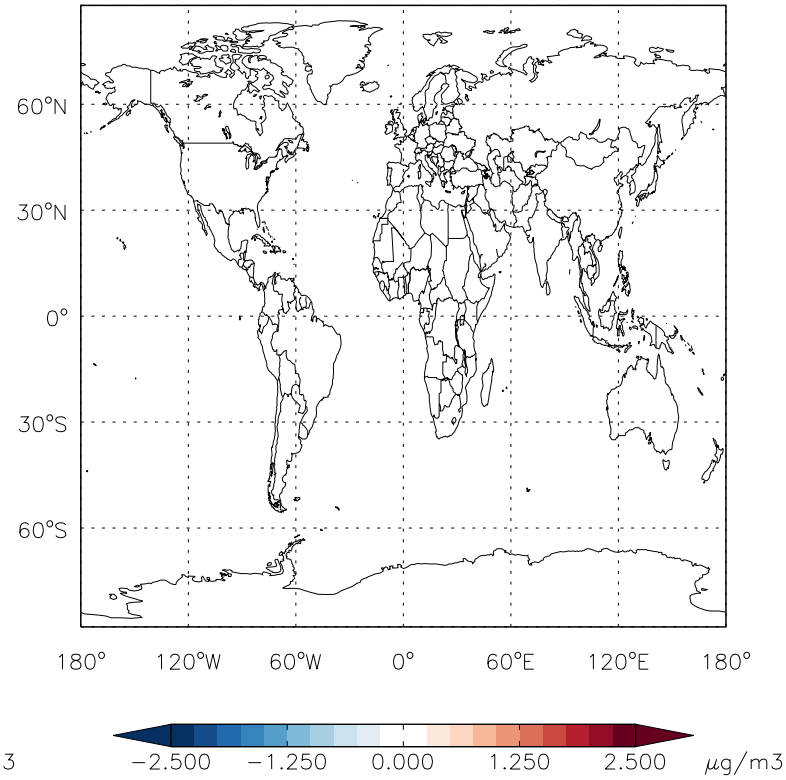
v11−01f−merra2−Run0 − v11−01d−Run1

DST4 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

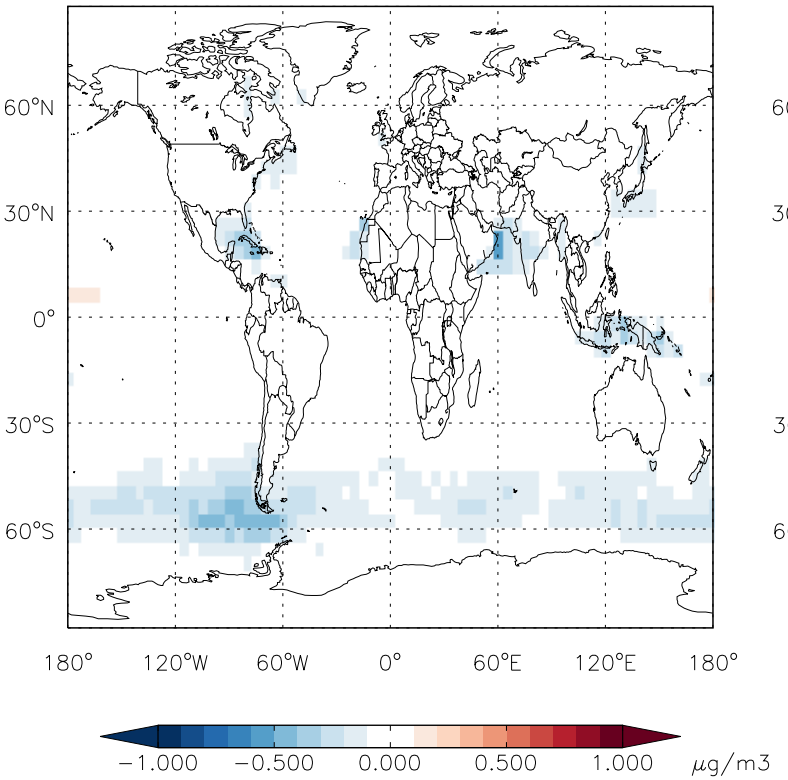
DST4− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

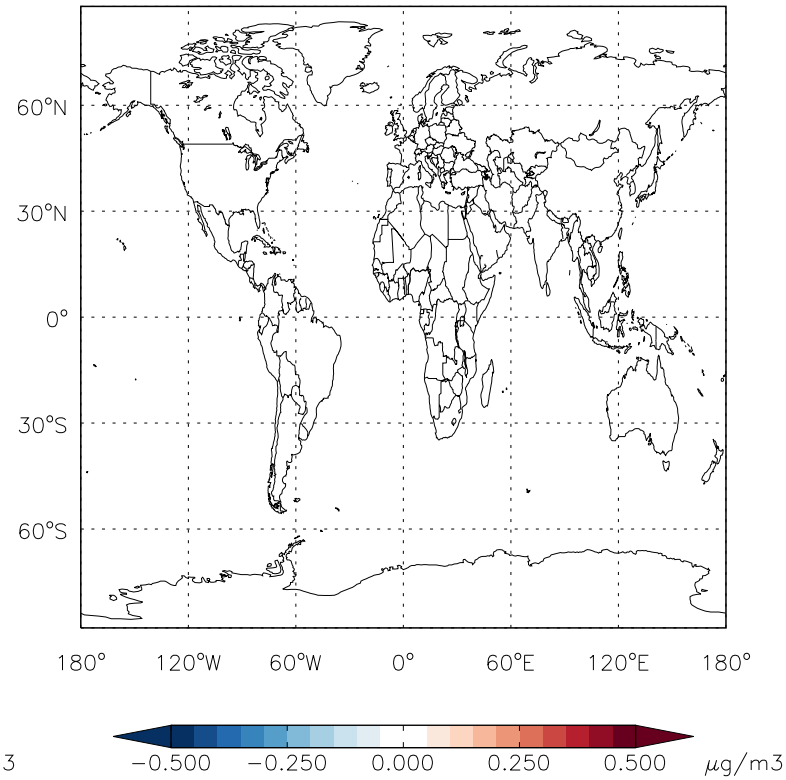
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SALA − Diff @ Surface for Jul



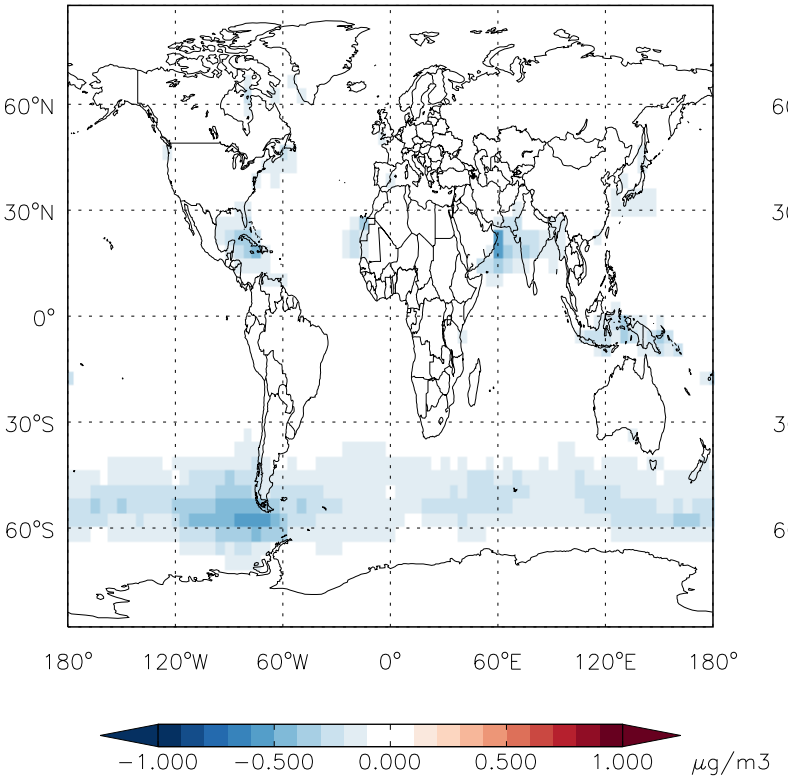
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SALA− Diff @ 500 hPa for Jul



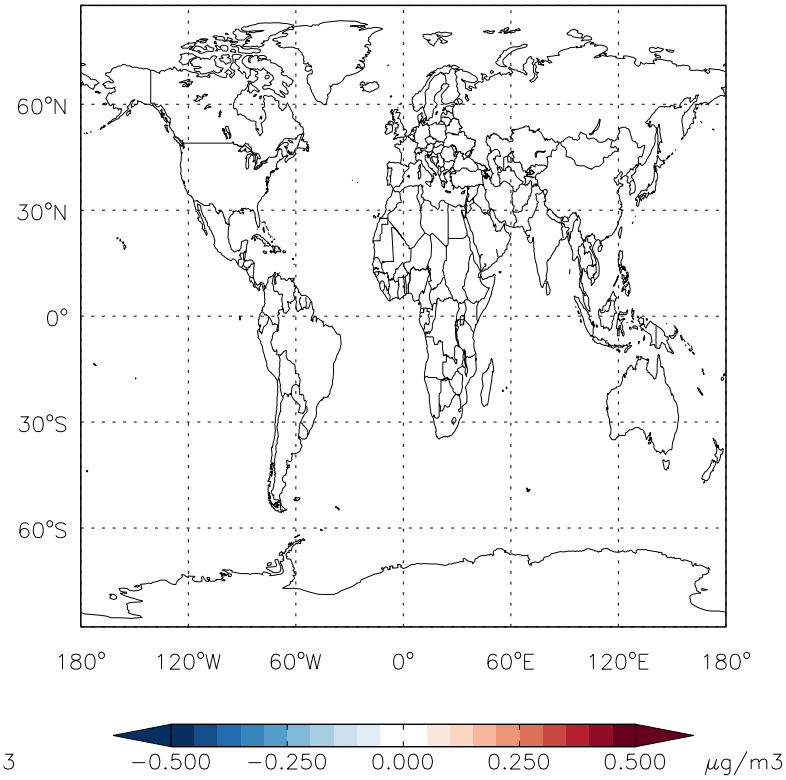
v11−01f−merra2−Run0 − v11−01d−Run1

SALA − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

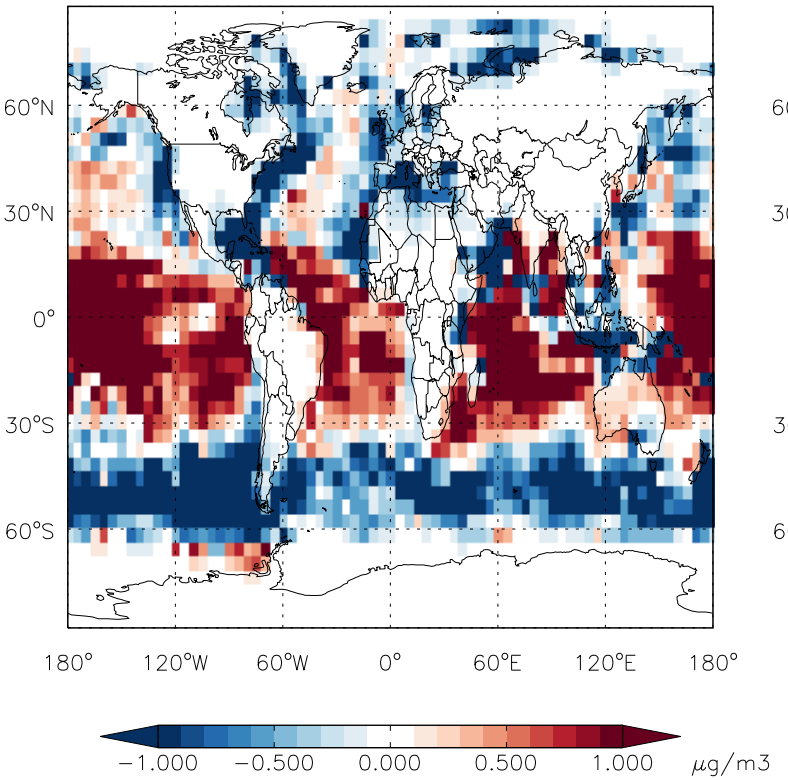
SALA− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

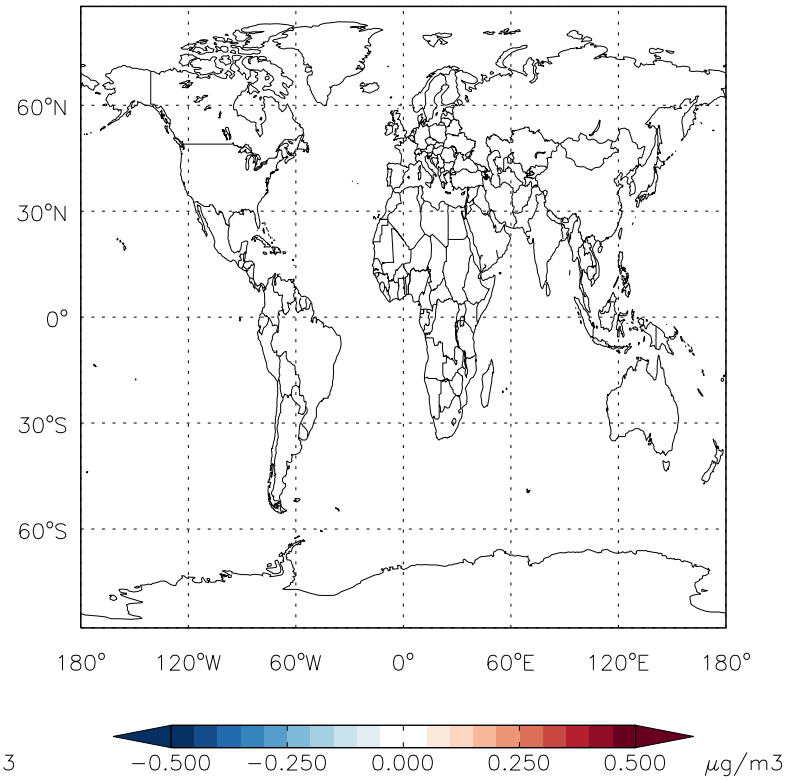
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SALC − Diff @ Surface for Jul



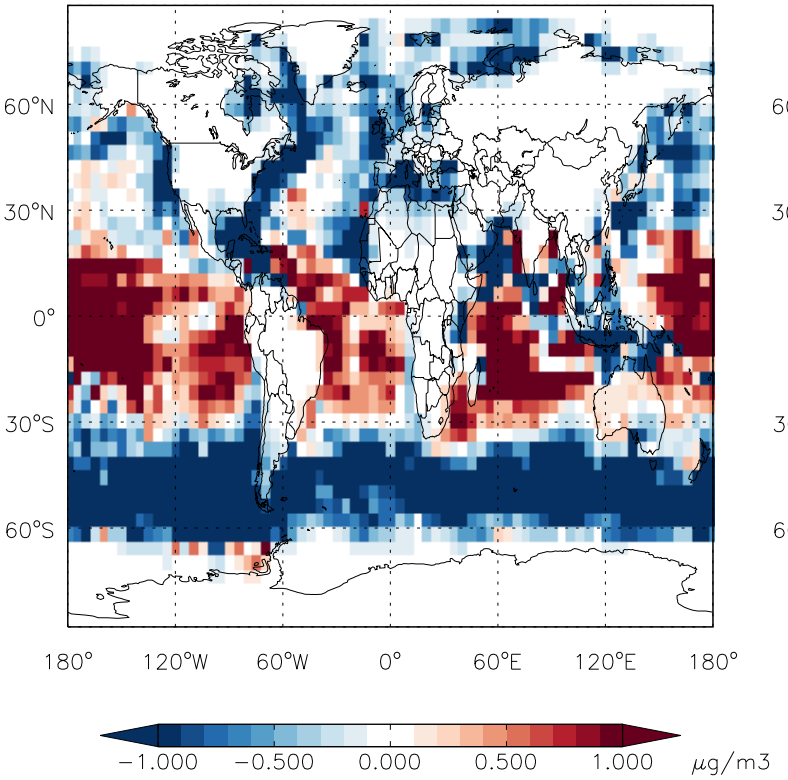
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

SALC− Diff @ 500 hPa for Jul



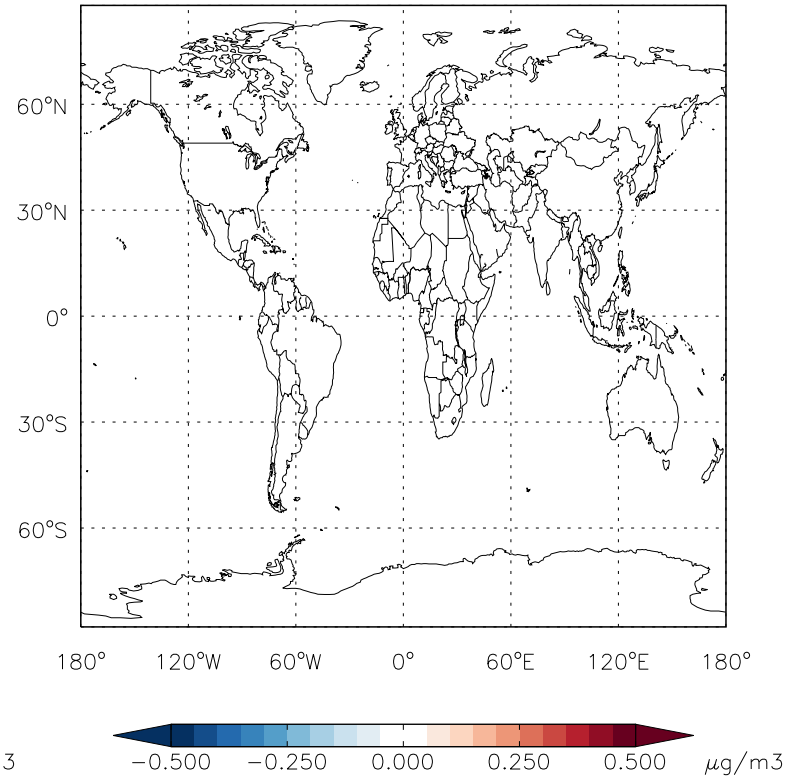
v11−01f−merra2−Run0 − v11−01d−Run1

SALC − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

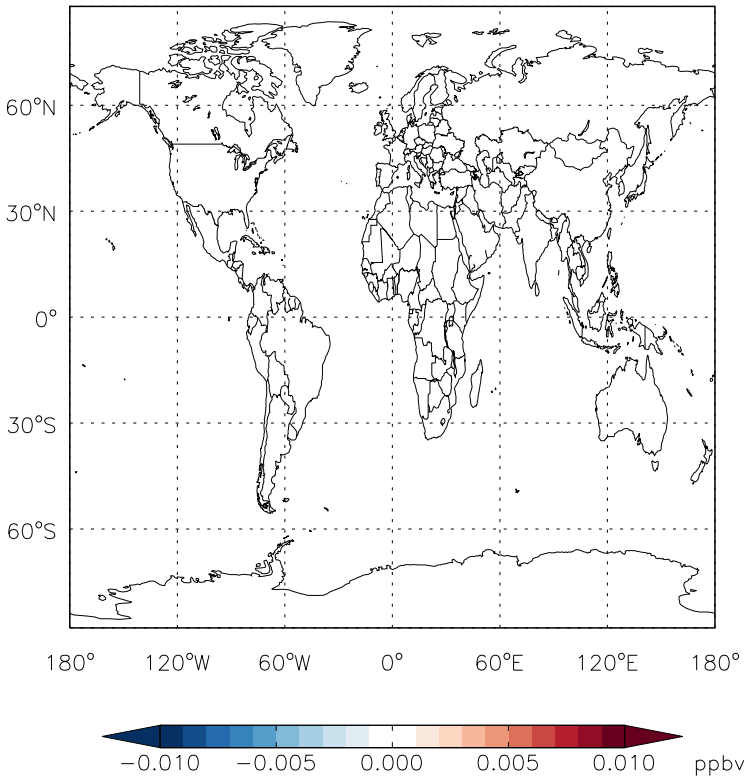
SALC− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

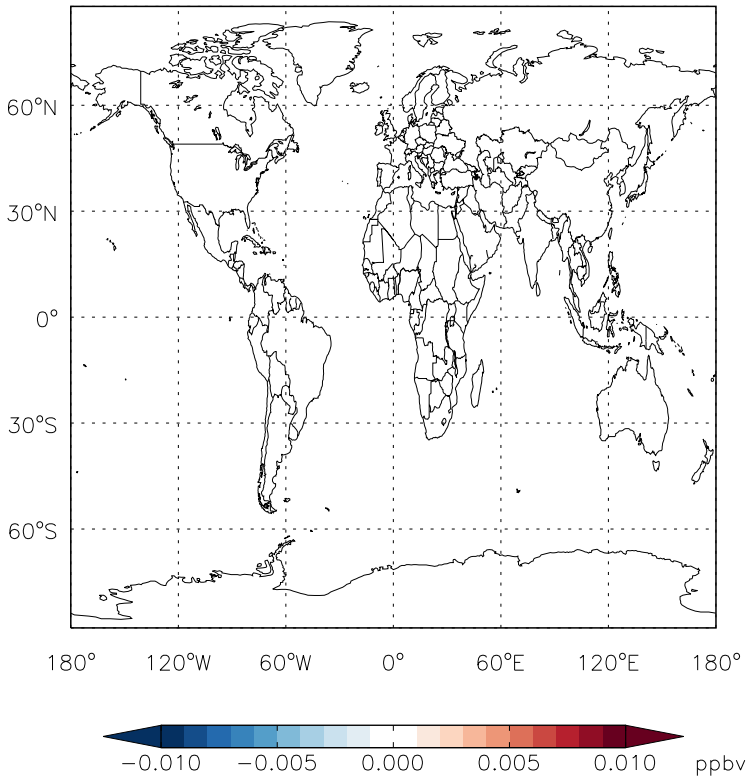
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

Br2 - Diff @ Surface for Jul



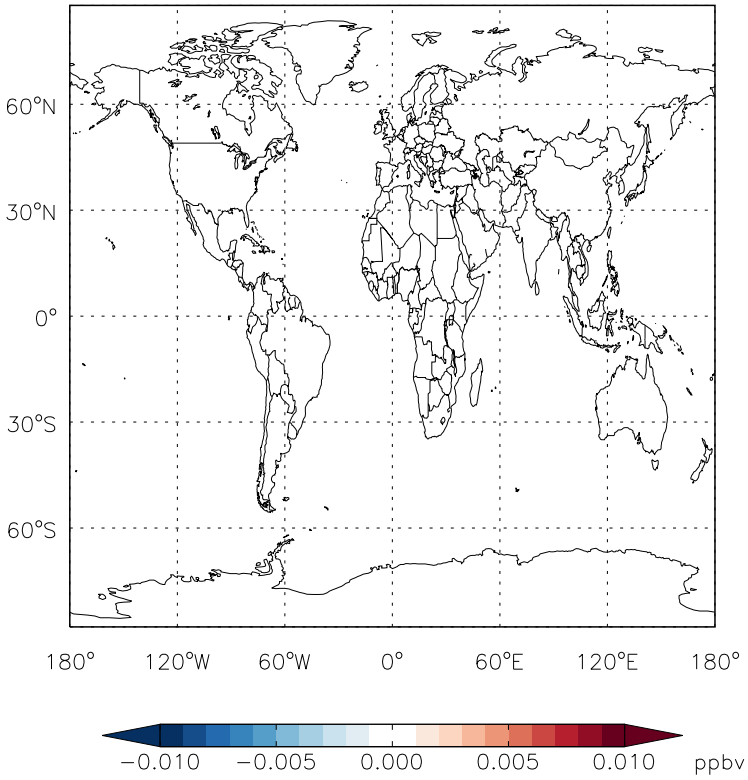
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

Br2- Diff @ 500 hPa for Jul



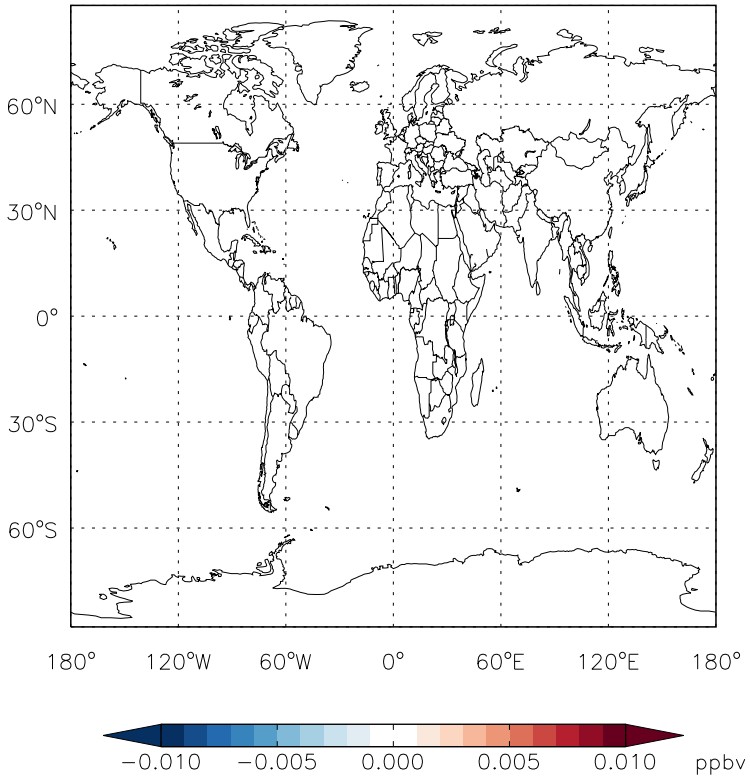
v11-01f-merra2-Run0 - v11-01d-Run1

Br2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

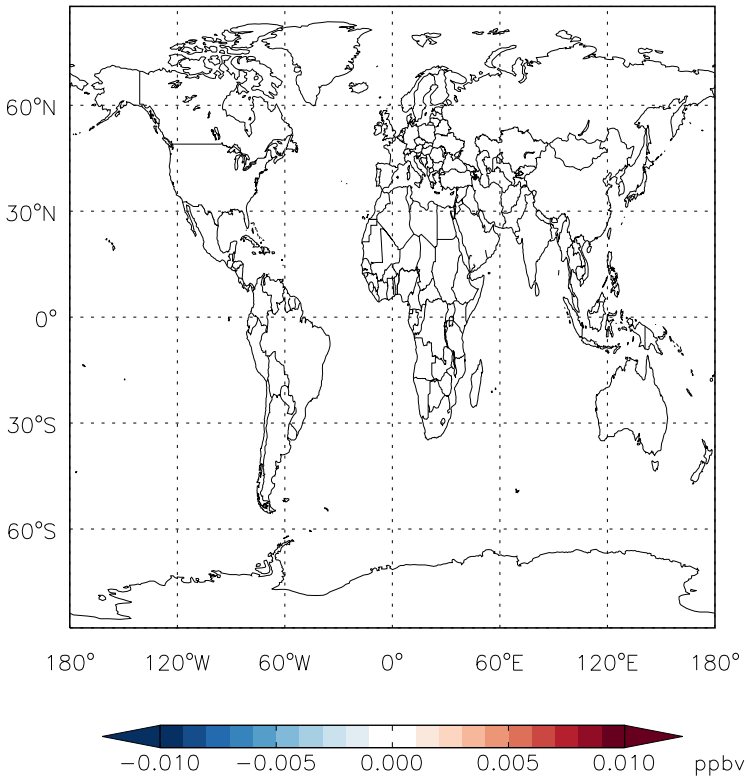
Br2- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

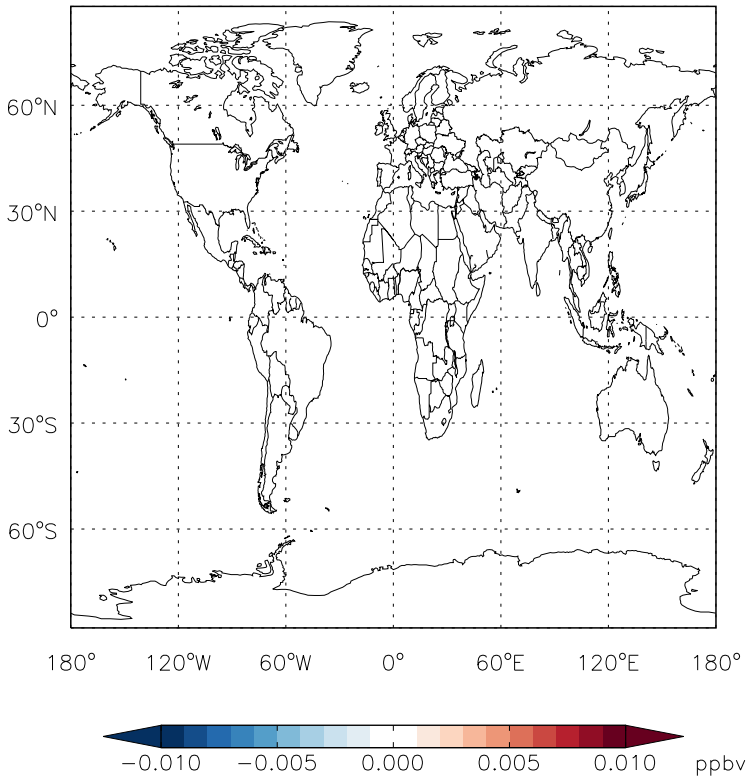
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

Br - Diff @ Surface for Jul



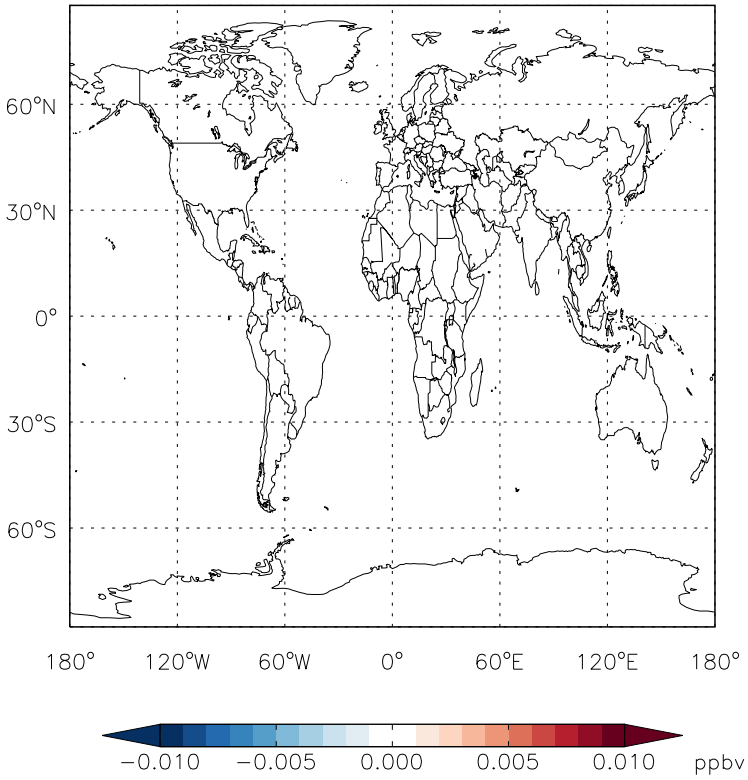
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

Br- Diff @ 500 hPa for Jul



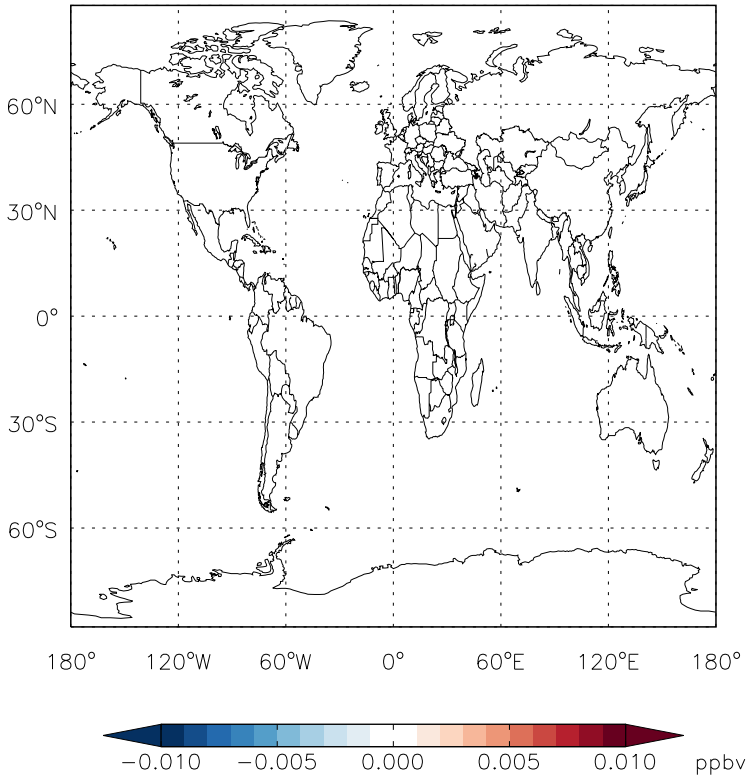
v11-01f-merra2-Run0 - v11-01d-Run1

Br - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

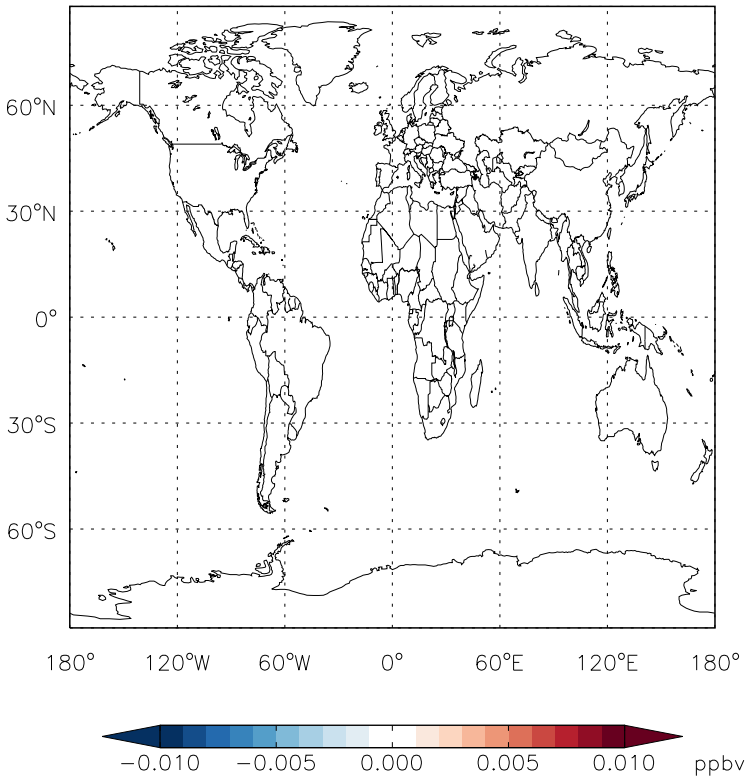
Br- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

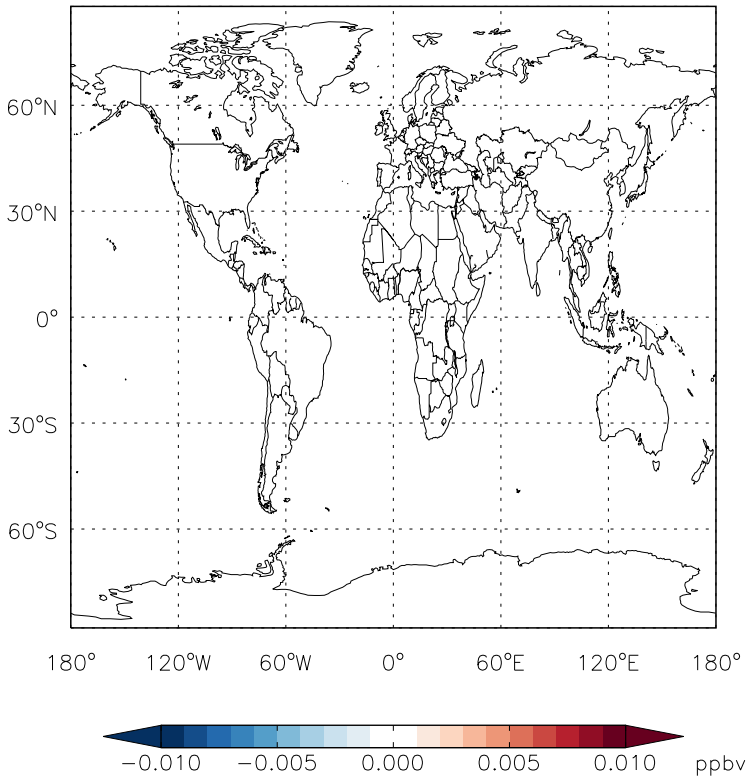
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BrO - Diff @ Surface for Jul



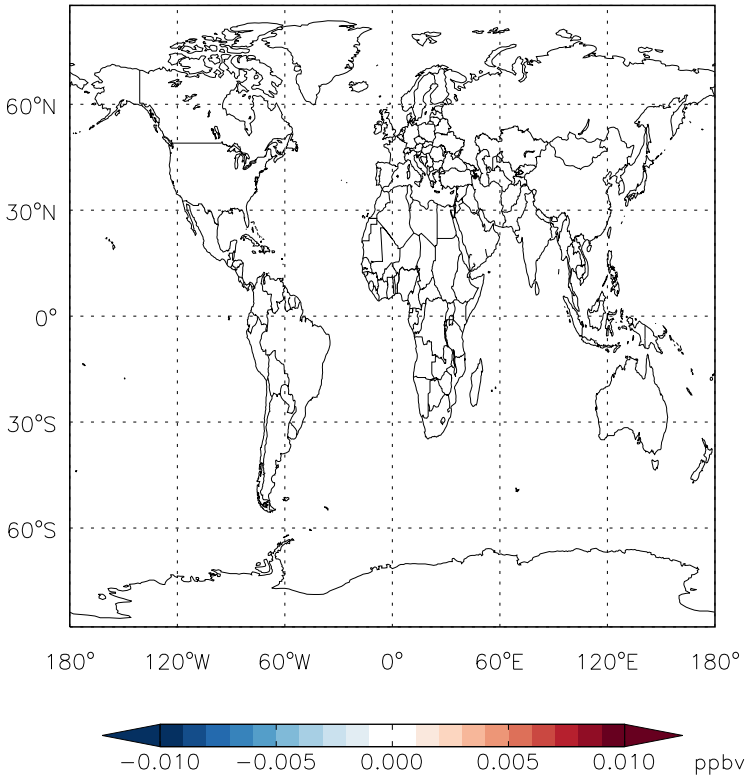
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BrO- Diff @ 500 hPa for Jul



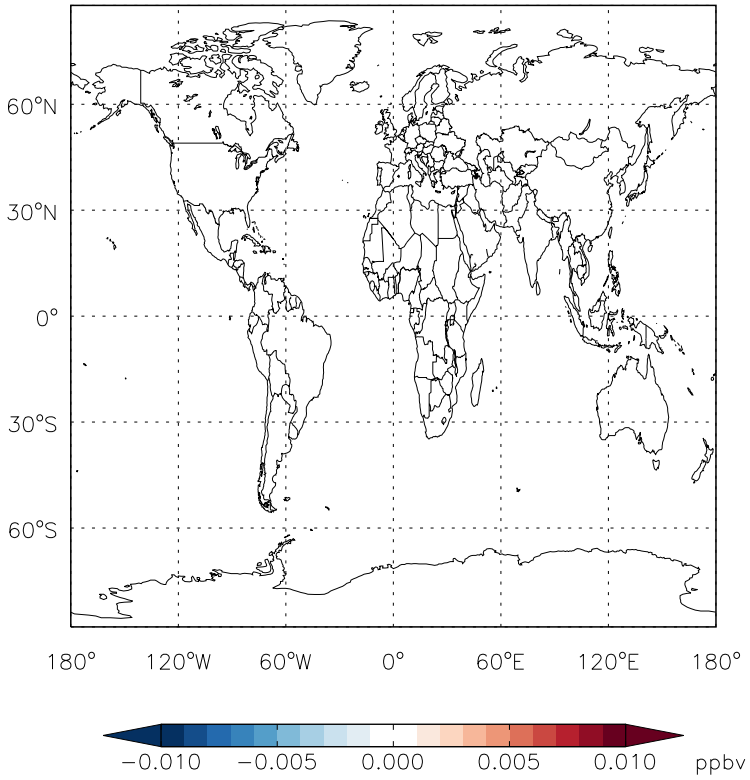
v11-01f-merra2-Run0 - v11-01d-Run1

BrO - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

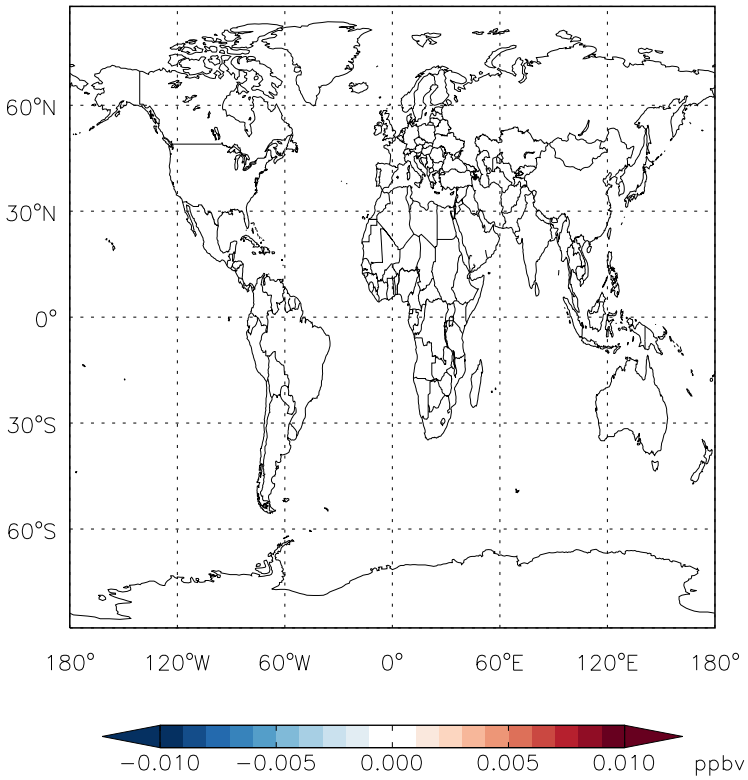
BrO- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

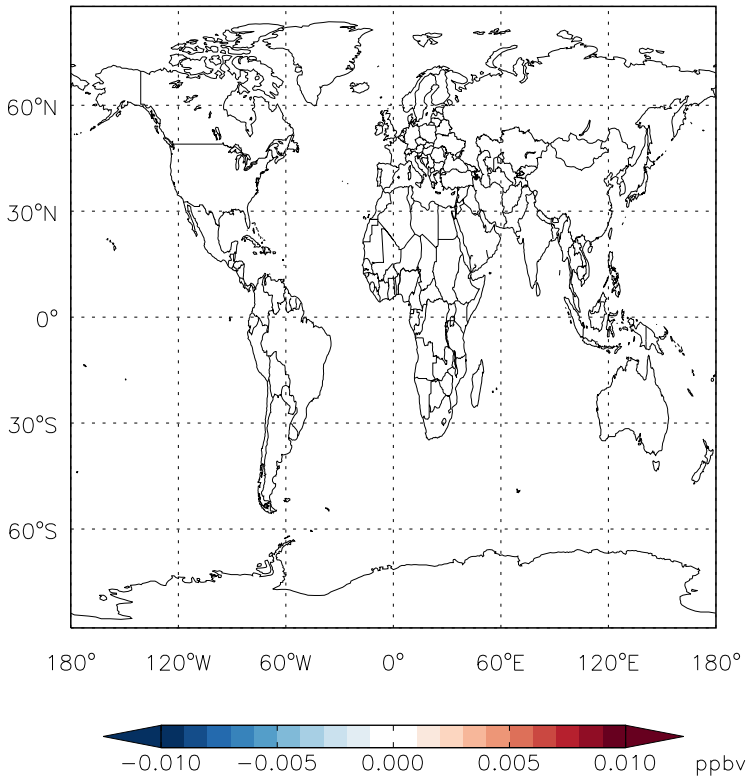
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HOBr - Diff @ Surface for Jul



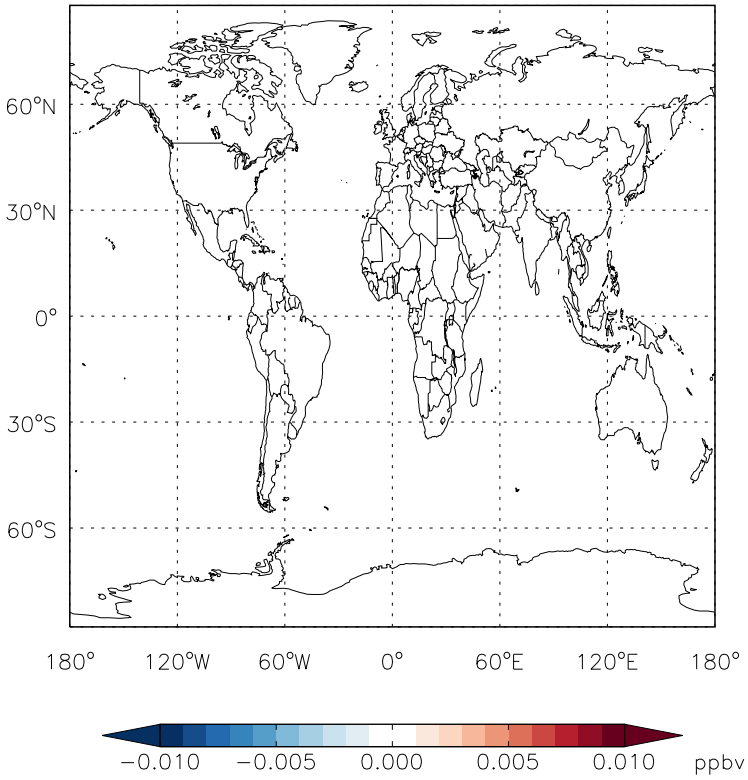
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HOBr- Diff @ 500 hPa for Jul



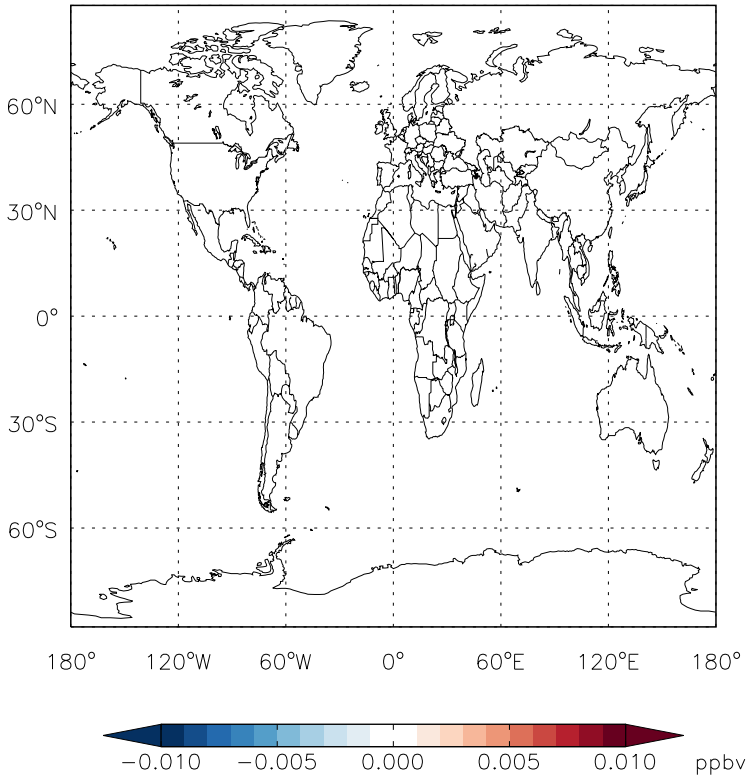
v11-01f-merra2-Run0 - v11-01d-Run1

HOBr - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

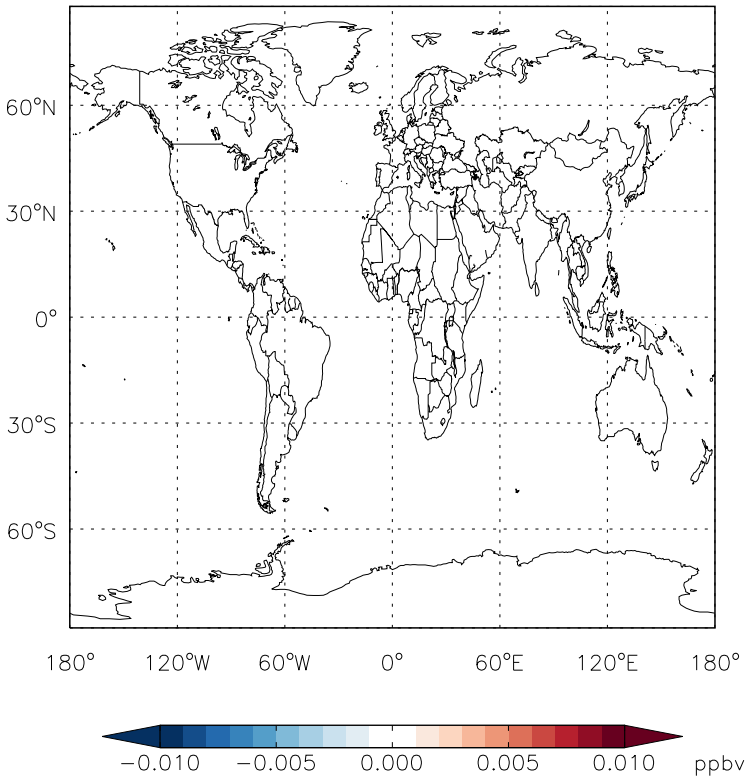
HOBr- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

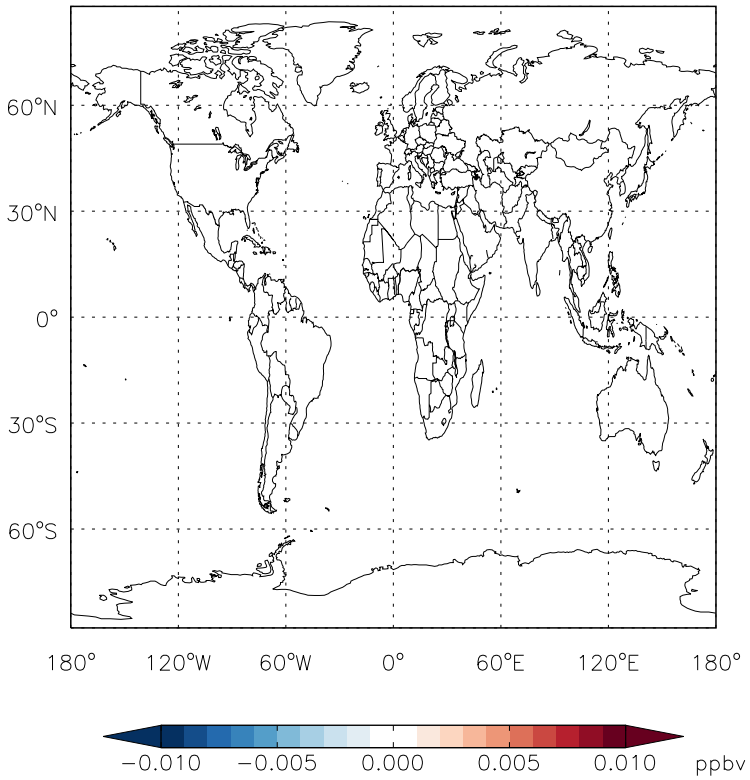
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HBr - Diff @ Surface for Jul



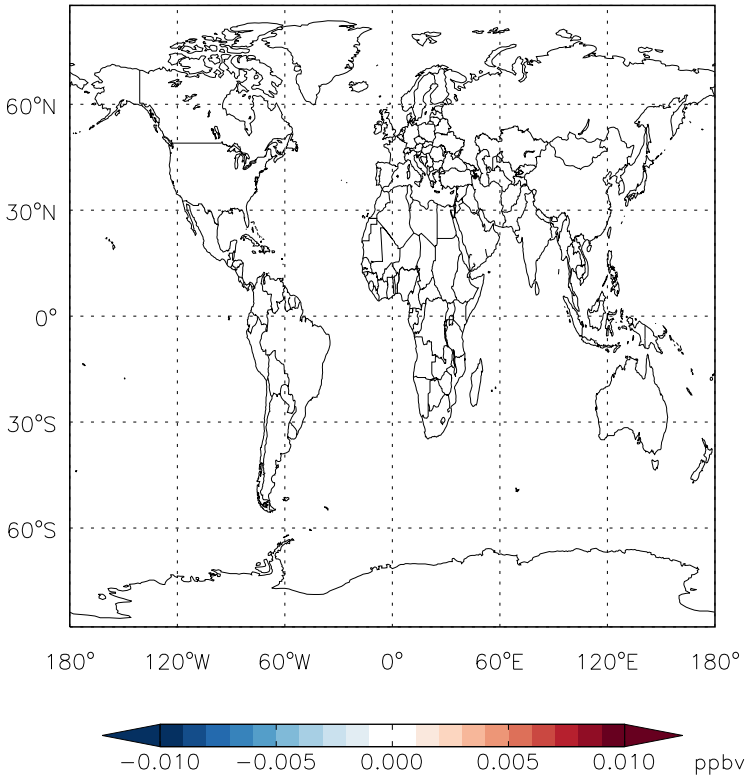
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HBr- Diff @ 500 hPa for Jul



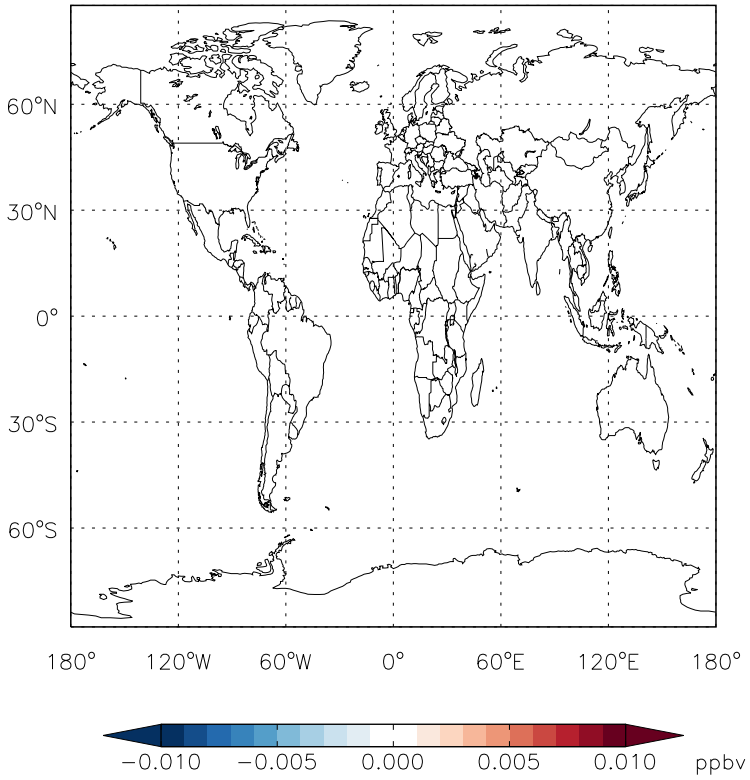
v11-01f-merra2-Run0 - v11-01d-Run1

HBr - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

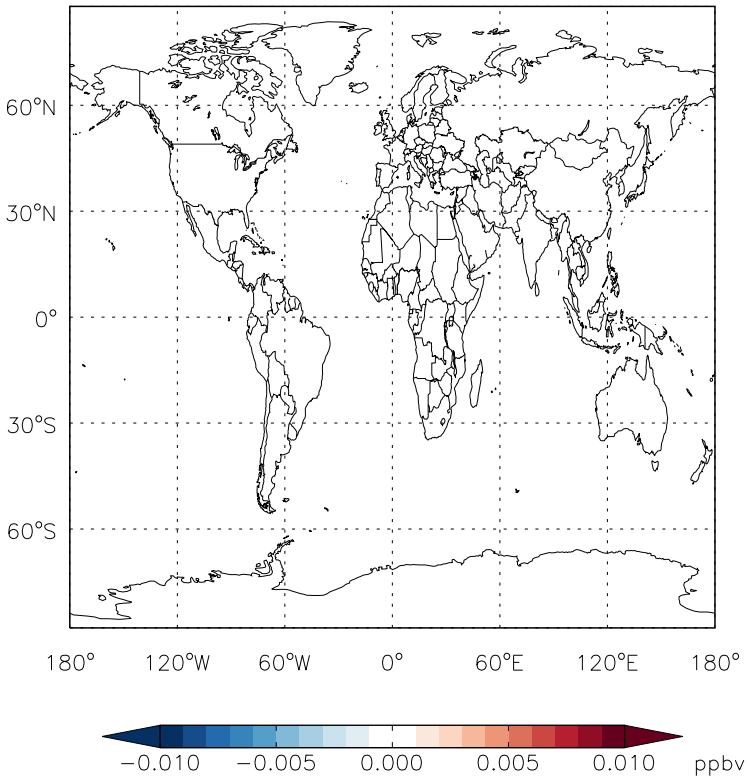
HBr- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

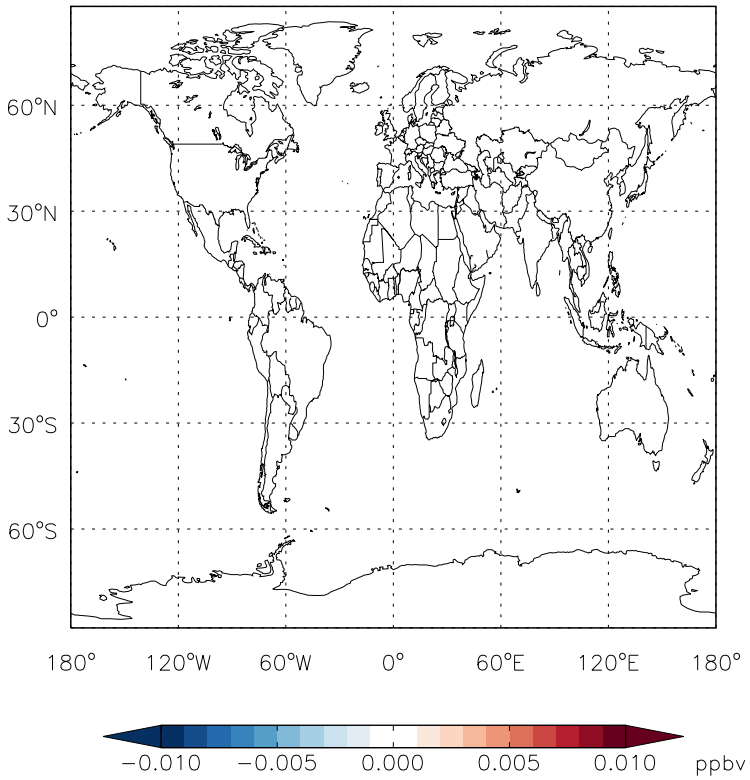
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BrNO2 - Diff @ Surface for Jul



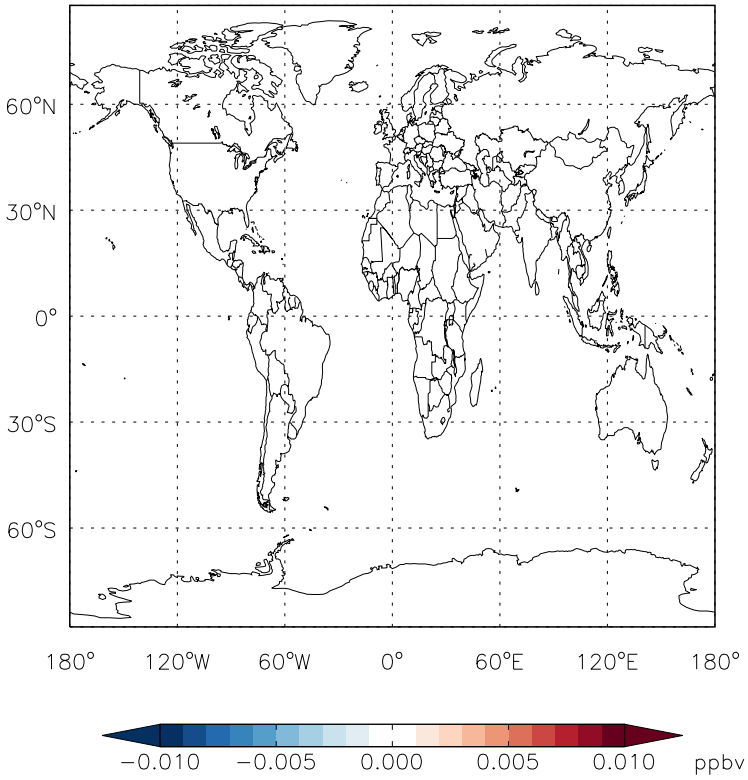
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BrNO2- Diff @ 500 hPa for Jul



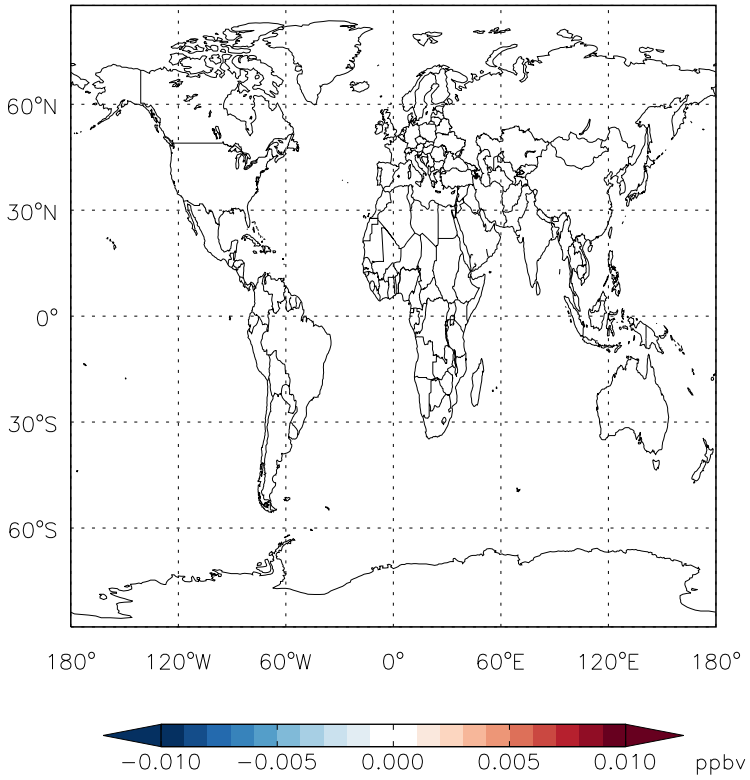
v11-01f-merra2-Run0 - v11-01d-Run1

BrNO2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

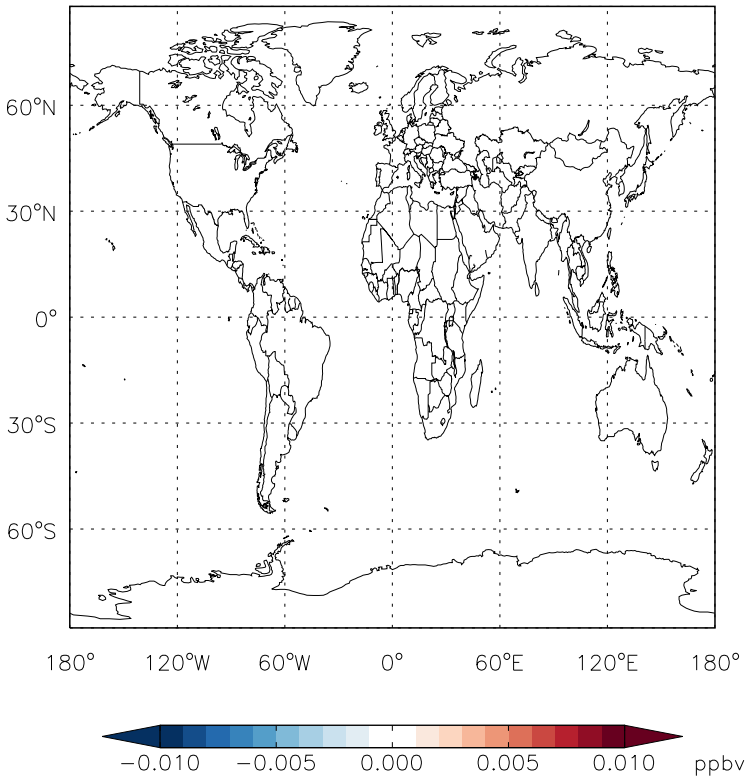
BrNO2- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

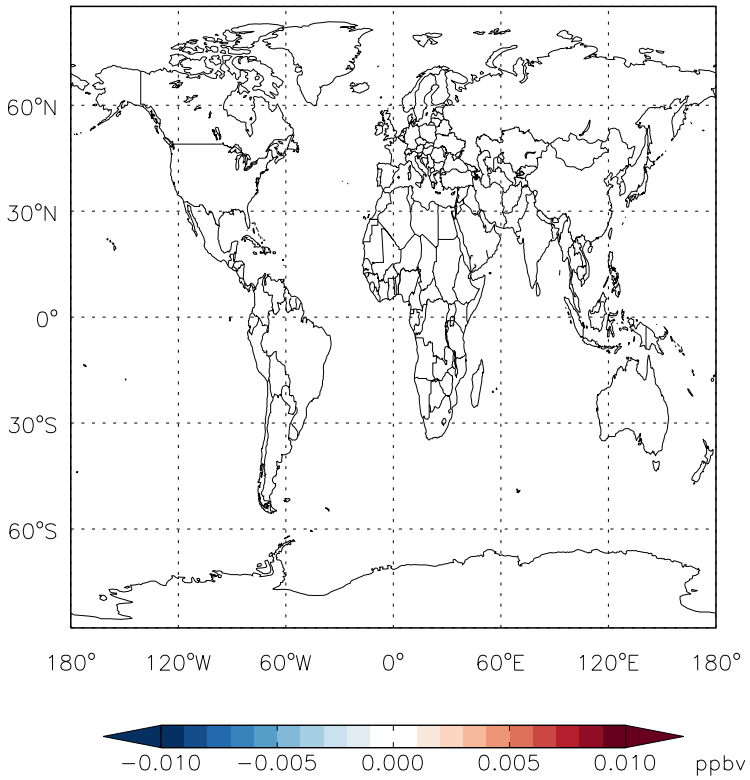
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

BrNO3 − Diff @ Surface for Jul



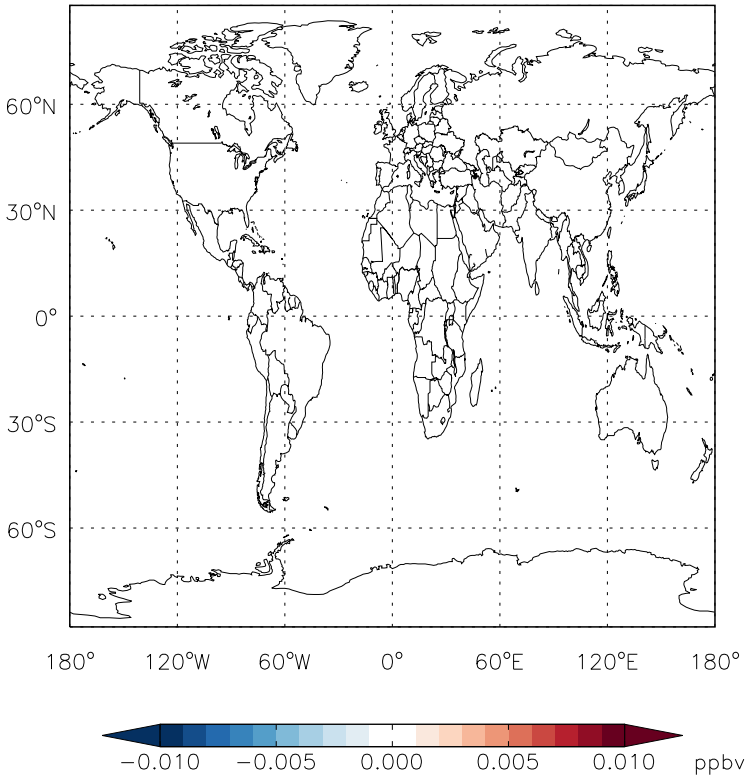
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

BrNO3− Diff @ 500 hPa for Jul



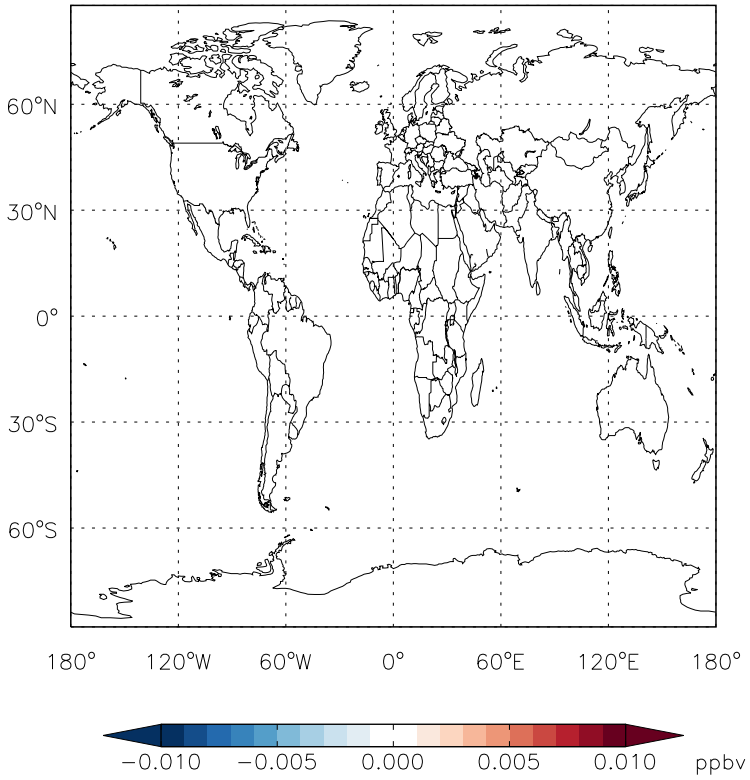
v11−01f−merra2−Run0 − v11−01d−Run1

BrNO3 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

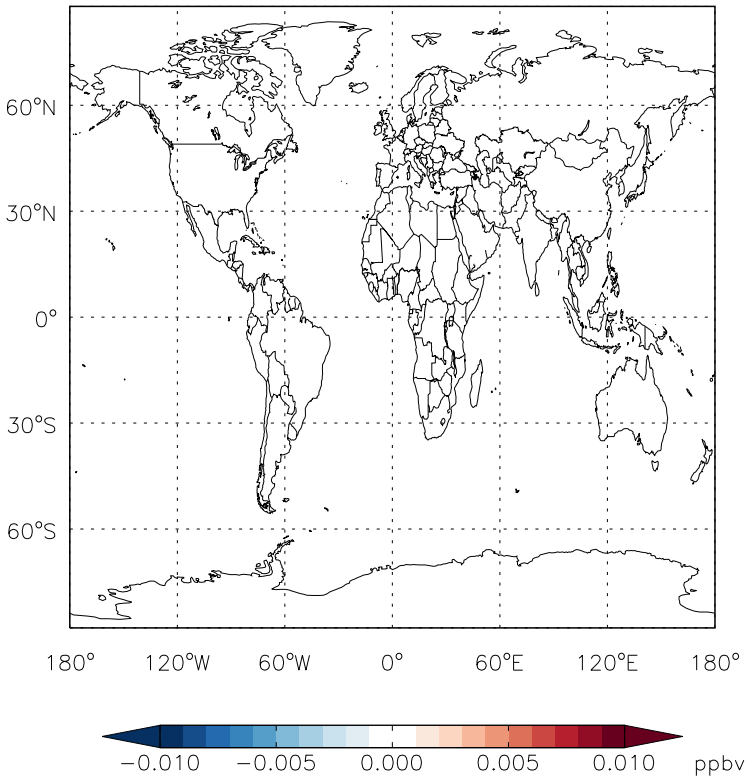
BrNO3− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

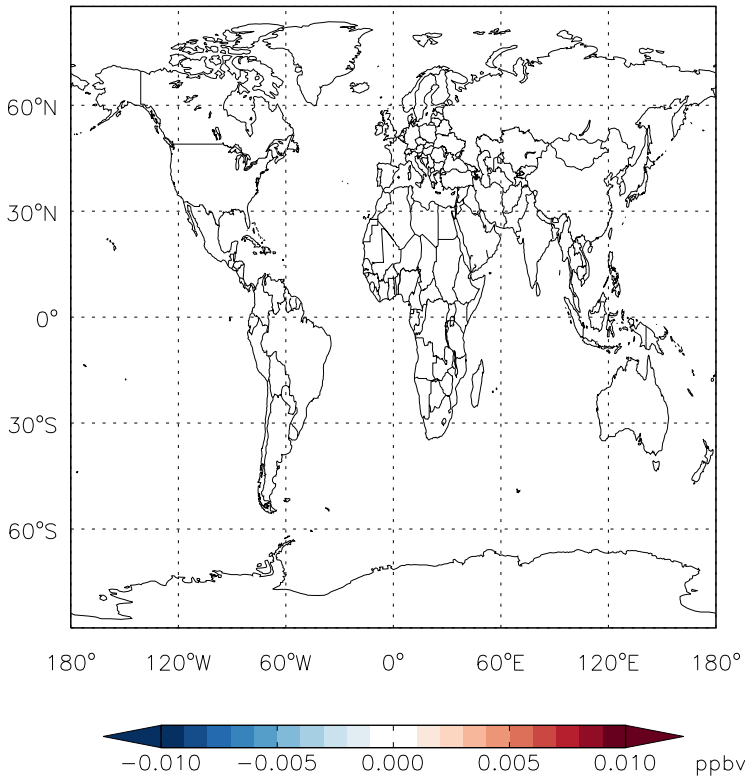
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CHBr3 - Diff @ Surface for Jul



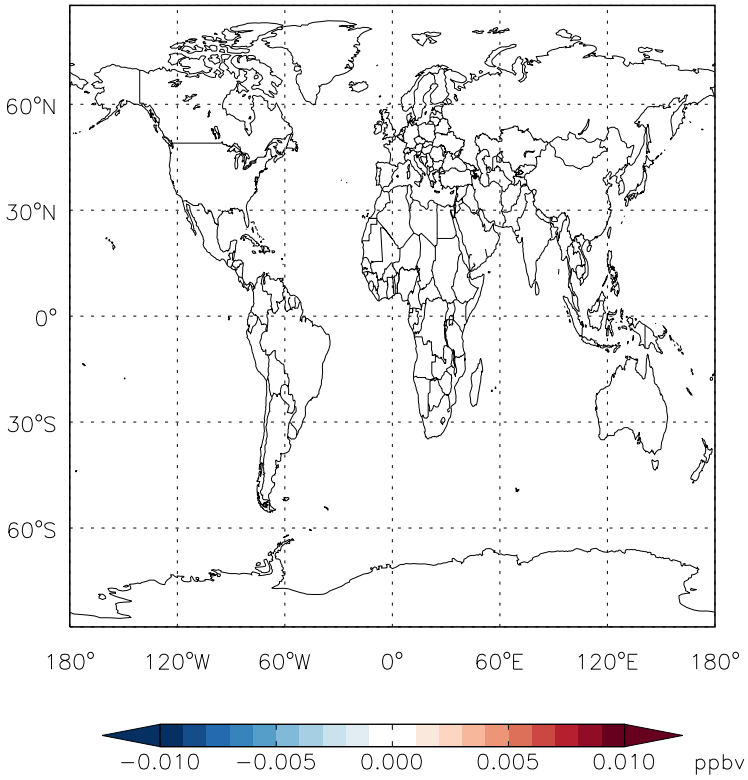
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CHBr3- Diff @ 500 hPa for Jul



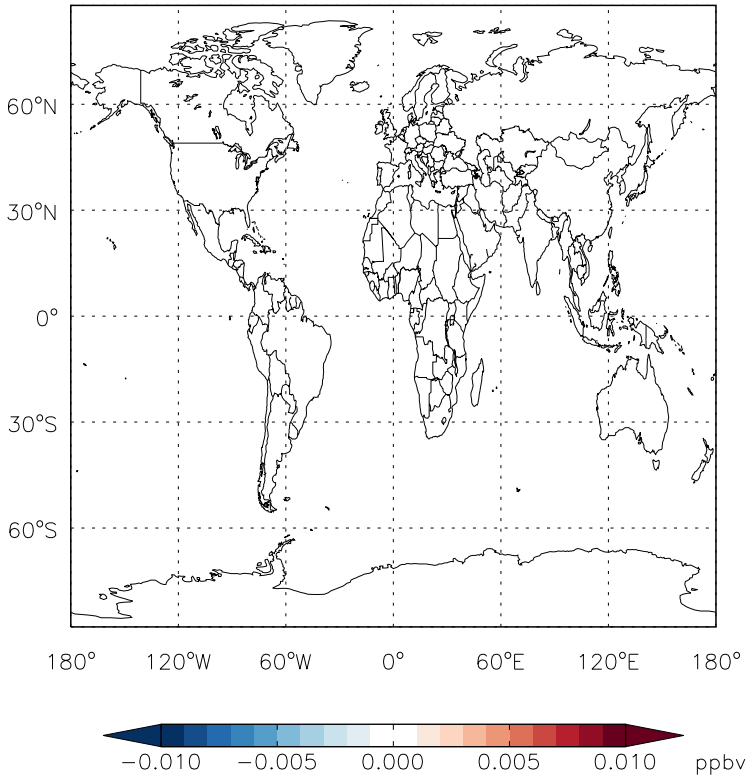
v11-01f-merra2-Run0 - v11-01d-Run1

CHBr3 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

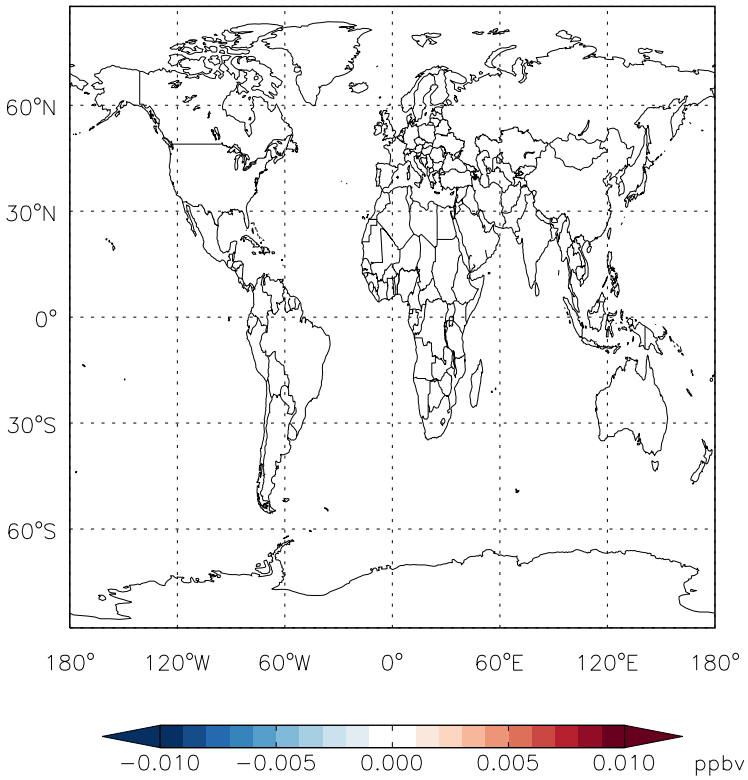
CHBr3- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

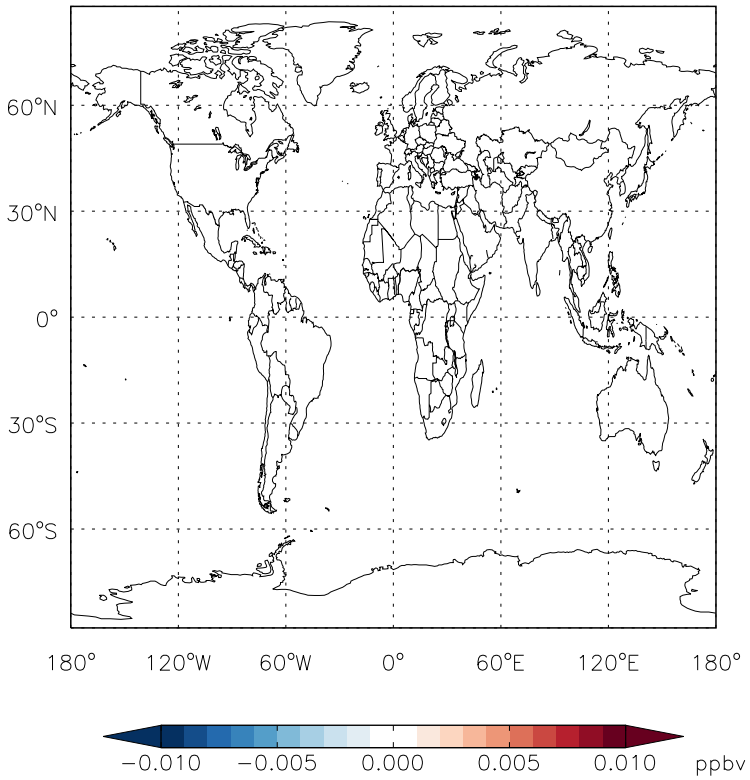
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CH2Br2 - Diff @ Surface for Jul



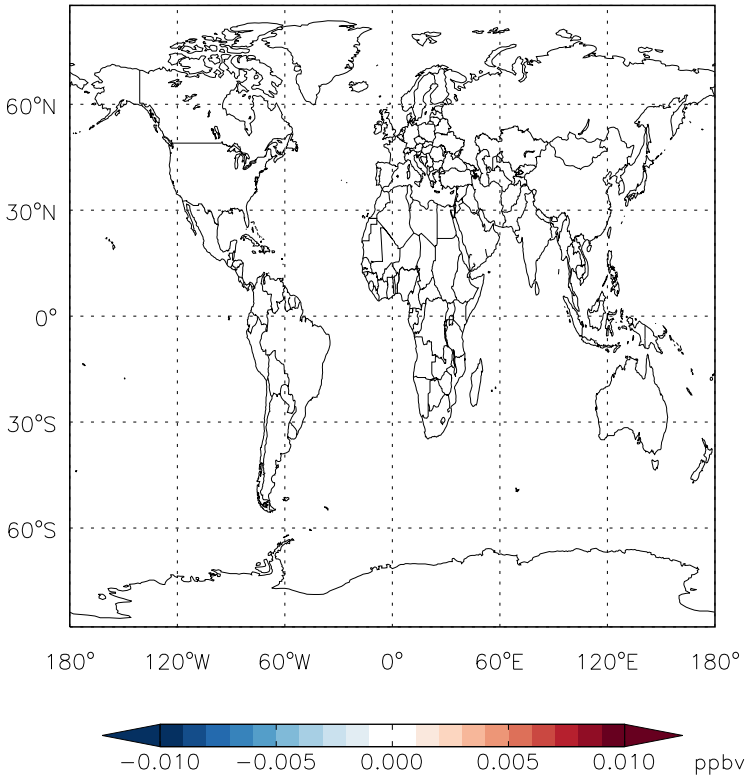
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CH2Br2- Diff @ 500 hPa for Jul



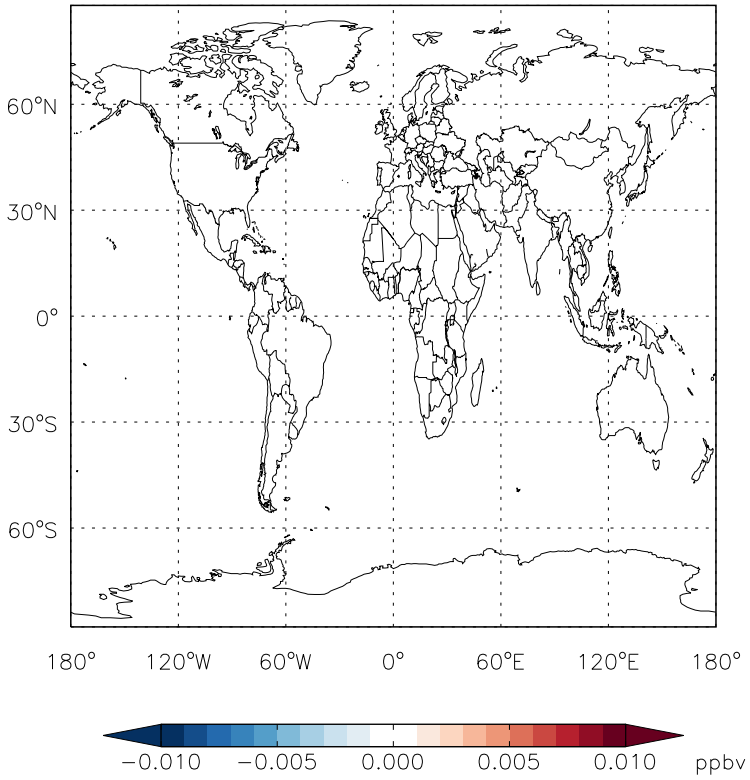
v11-01f-merra2-Run0 - v11-01d-Run1

CH2Br2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

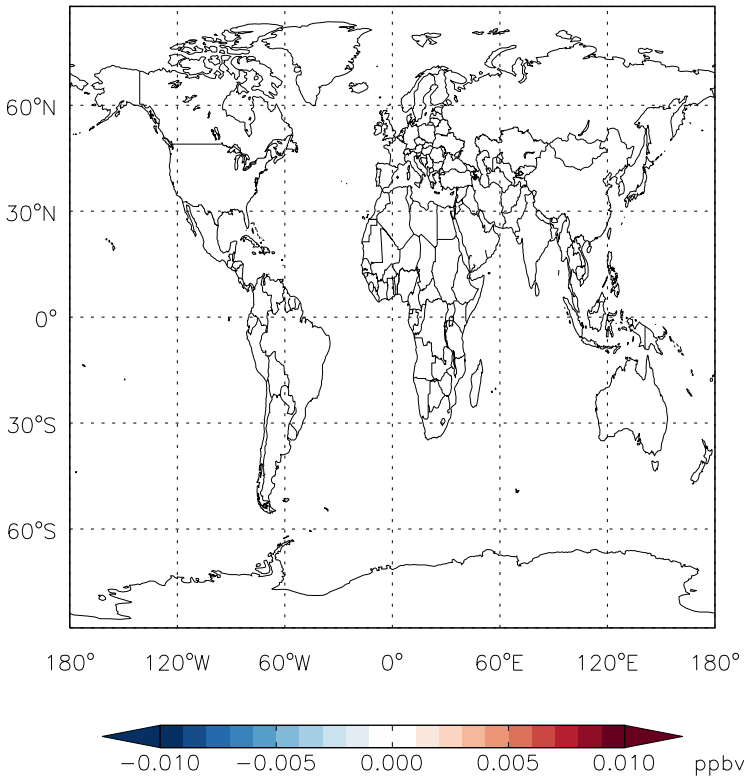
CH2Br2- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

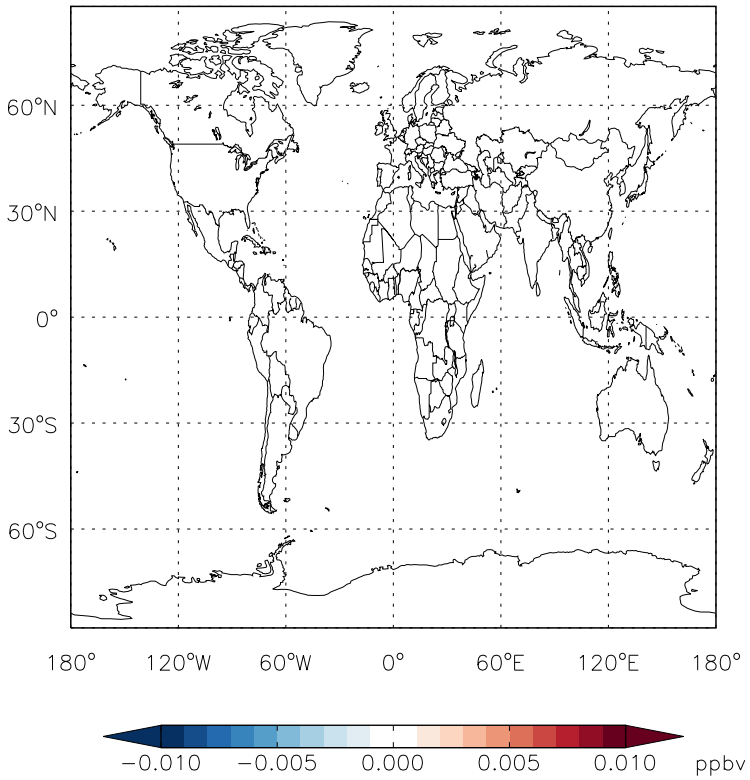
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH3Br − Diff @ Surface for Jul



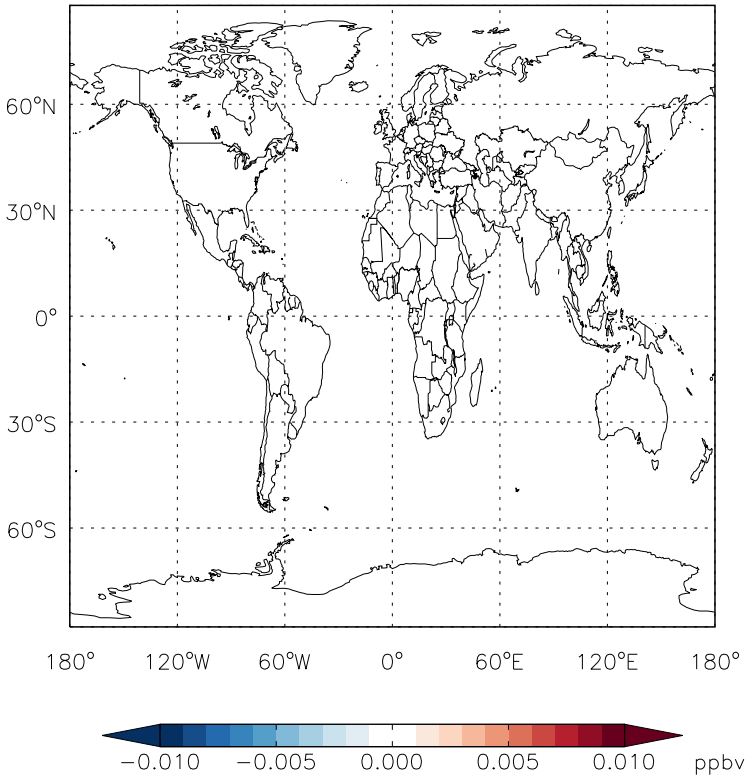
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH3Br− Diff @ 500 hPa for Jul



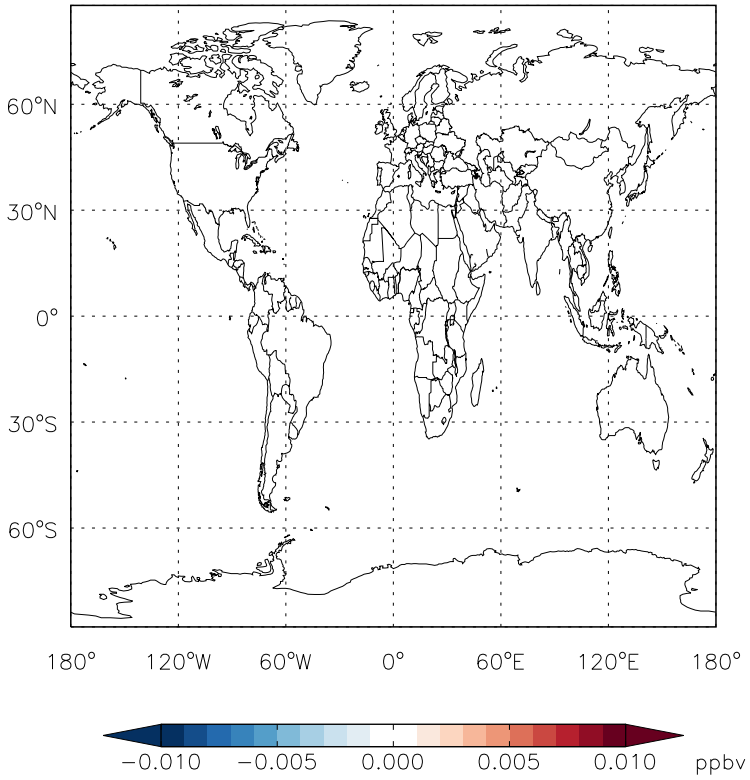
v11−01f−merra2−Run0 − v11−01d−Run1

CH3Br − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

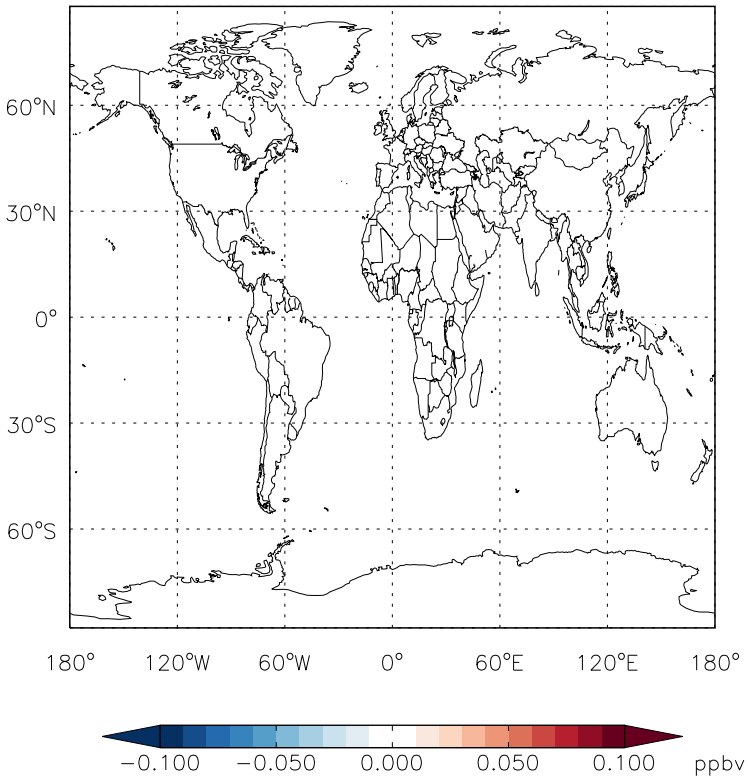
CH3Br− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

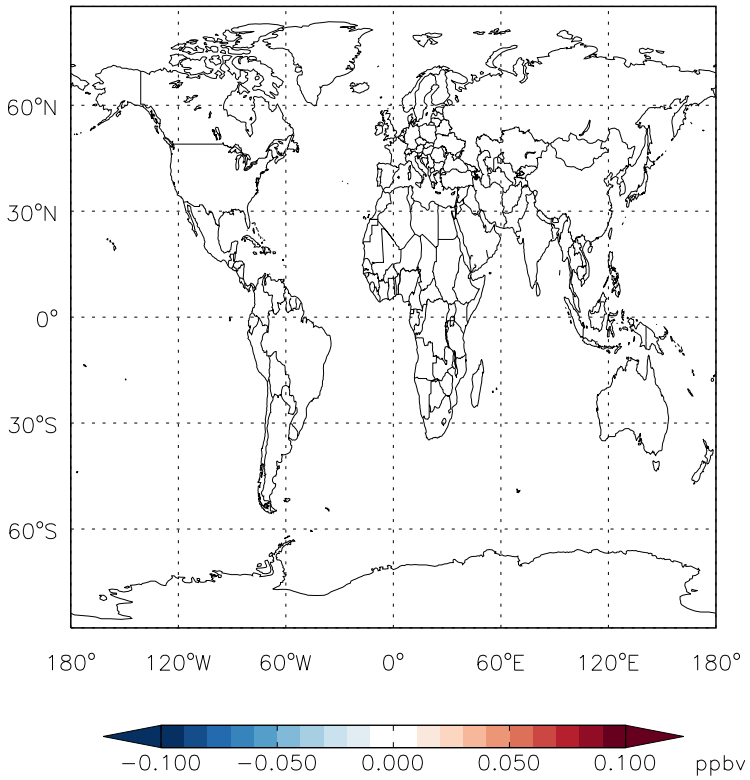
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MPN - Diff @ Surface for Jul



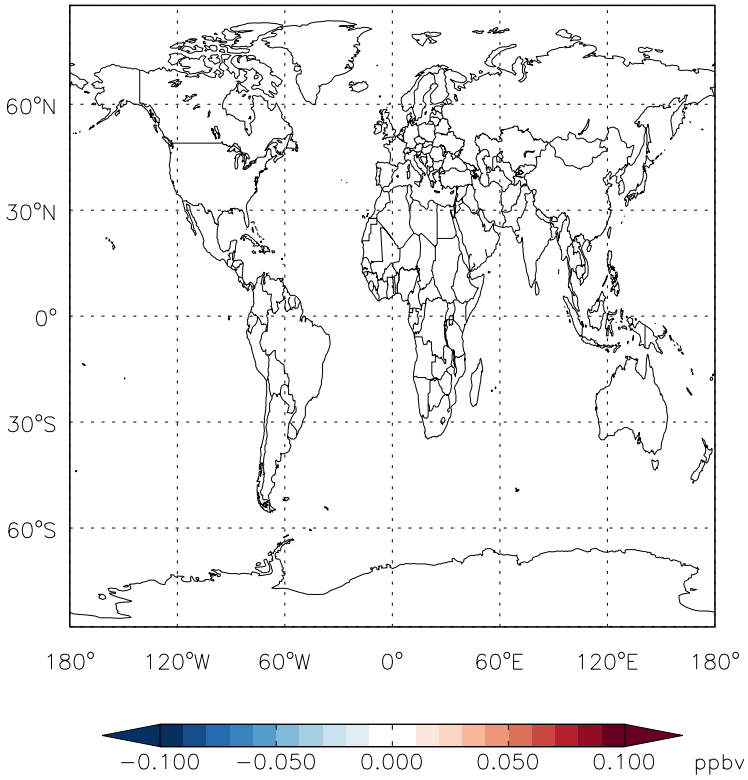
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MPN- Diff @ 500 hPa for Jul



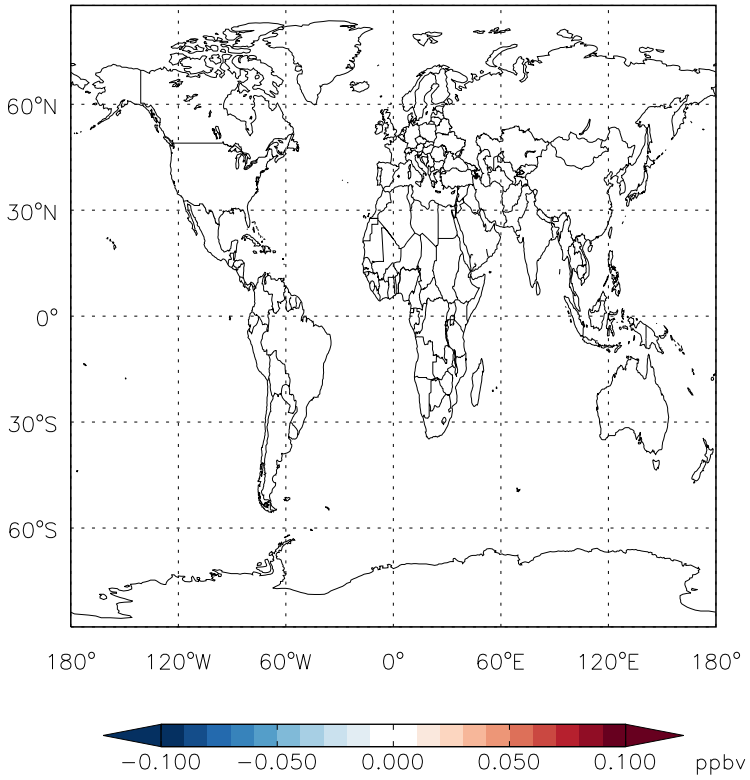
v11-01f-merra2-Run0 - v11-01d-Run1

MPN - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

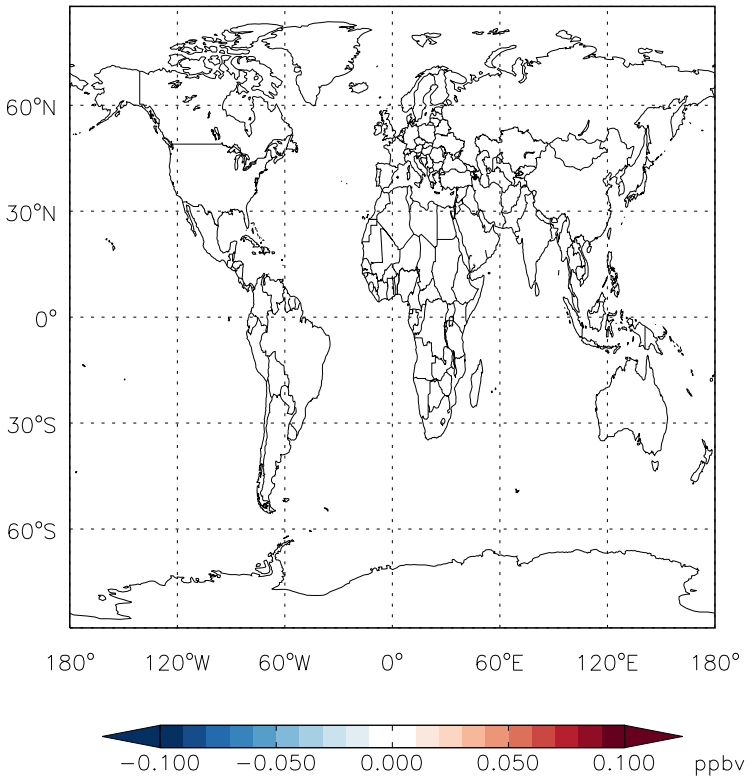
MPN- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

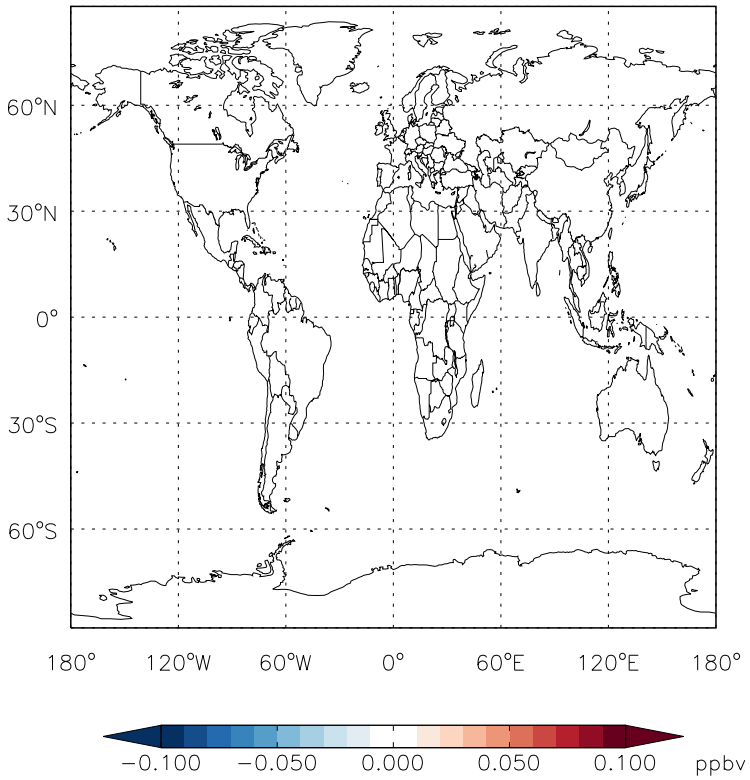
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ISOPN - Diff @ Surface for Jul



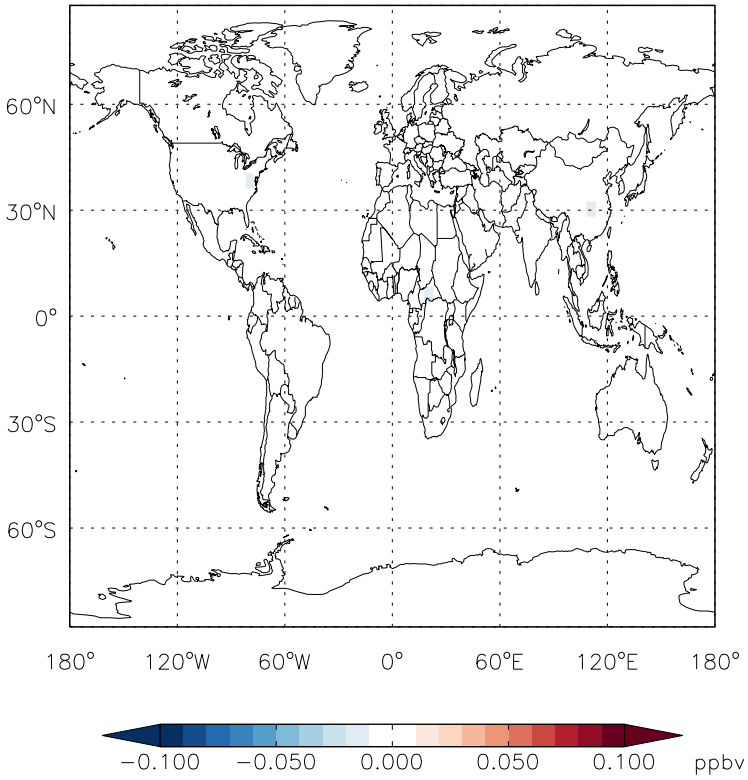
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ISOPN- Diff @ 500 hPa for Jul



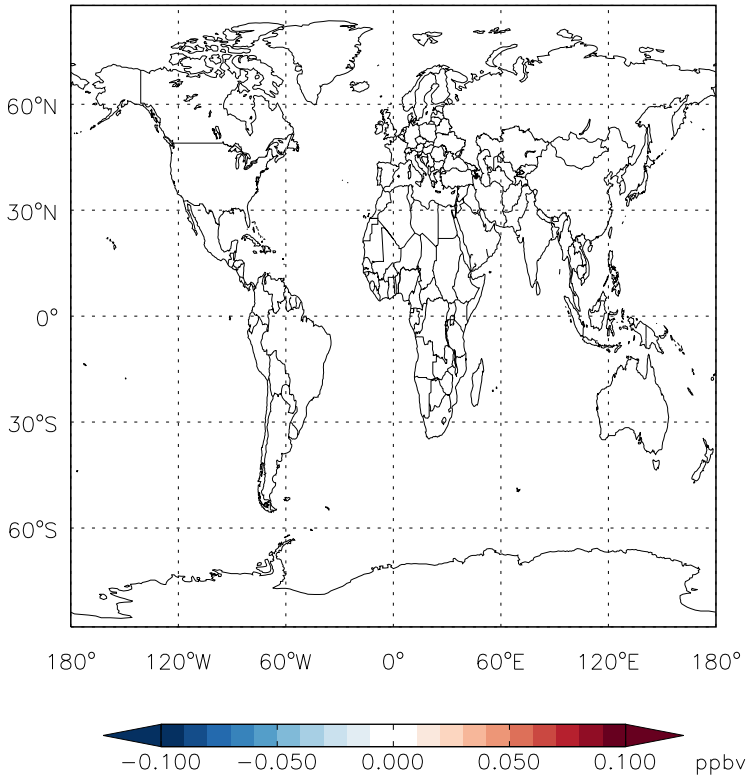
v11-01f-merra2-Run0 - v11-01d-Run1

ISOPN - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

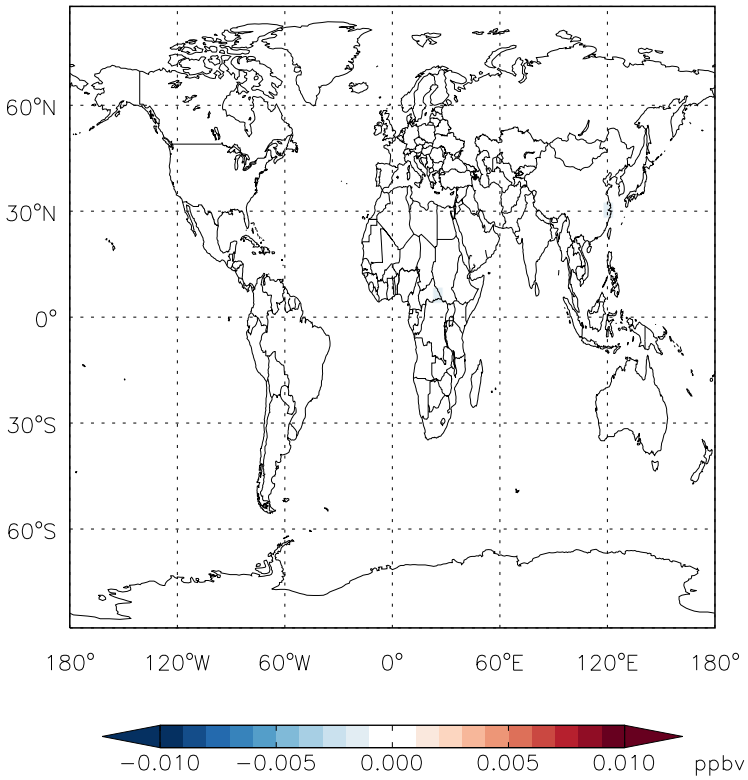
ISOPN- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

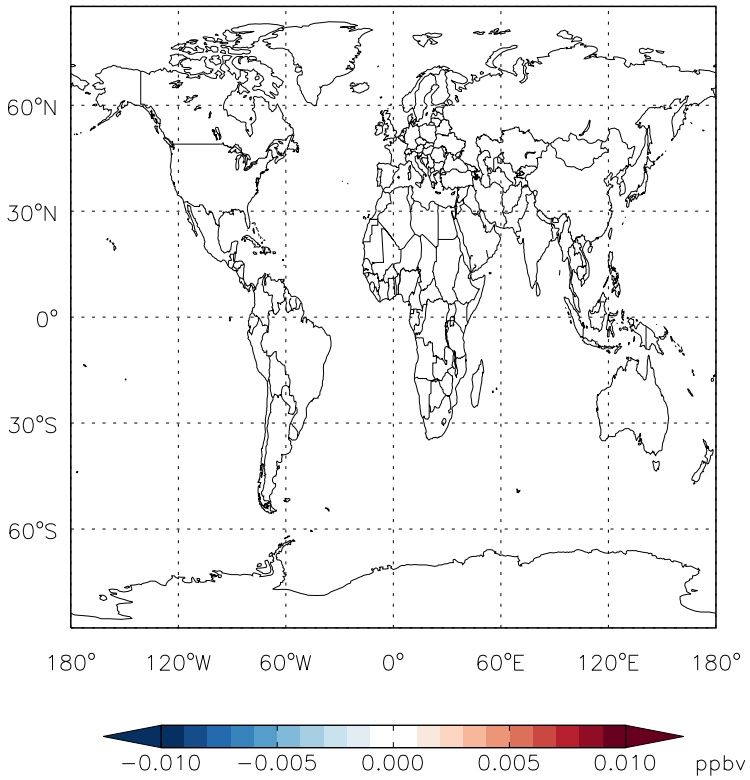
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MOBA - Diff @ Surface for Jul



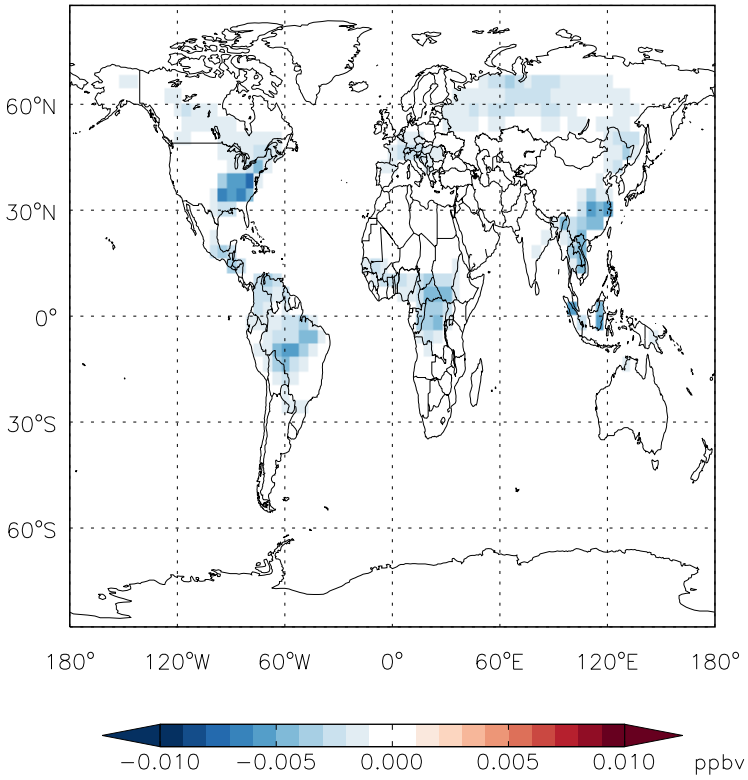
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MOBA- Diff @ 500 hPa for Jul



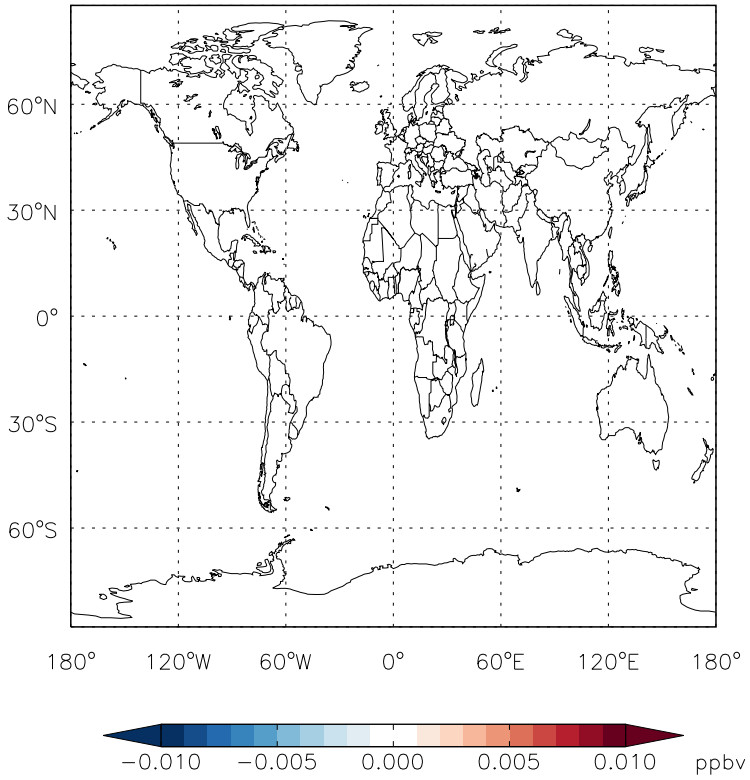
v11-01f-merra2-Run0 - v11-01d-Run1

MOBA - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

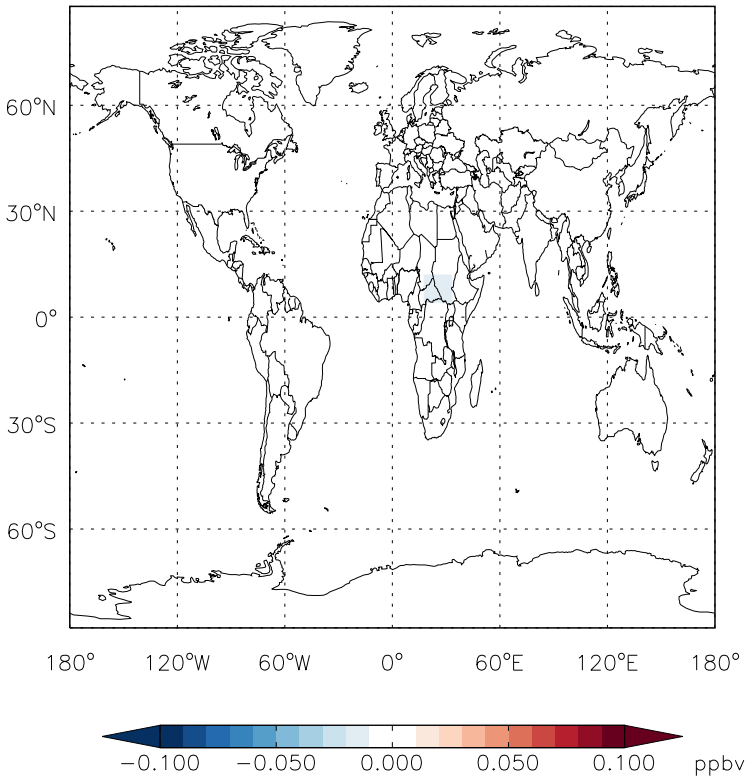
MOBA- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

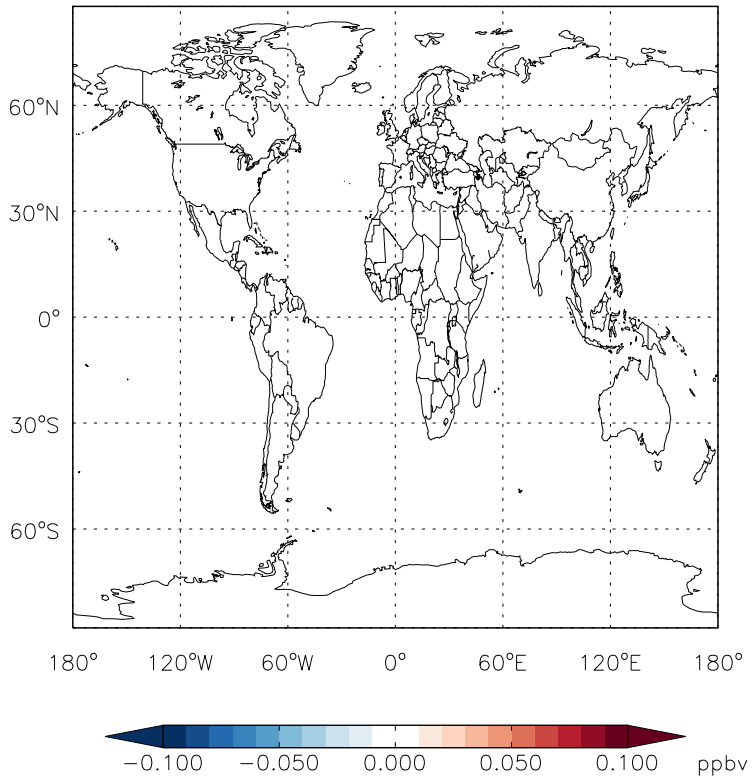
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

PROPNN - Diff @ Surface for Jul



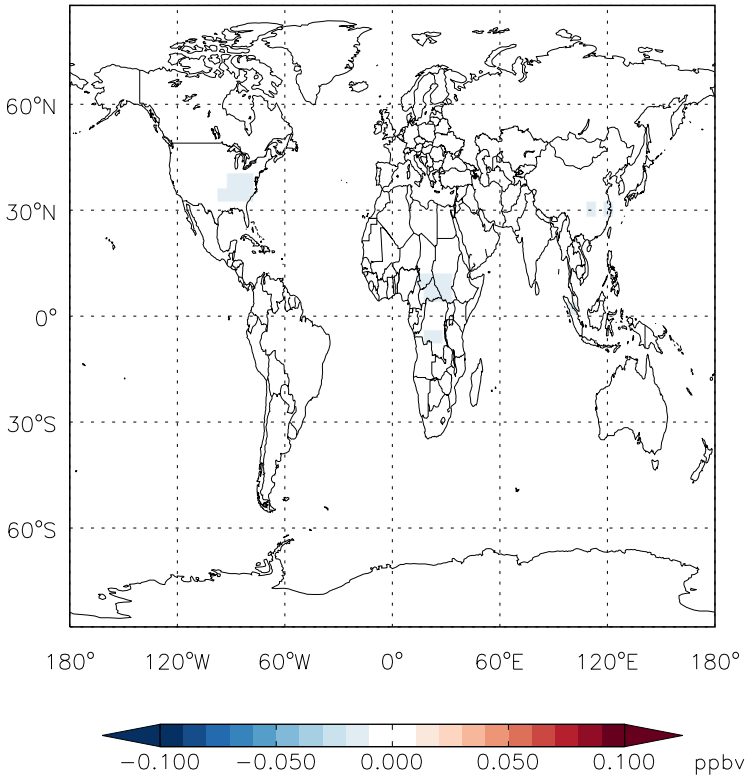
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

PROPNN- Diff @ 500 hPa for Jul



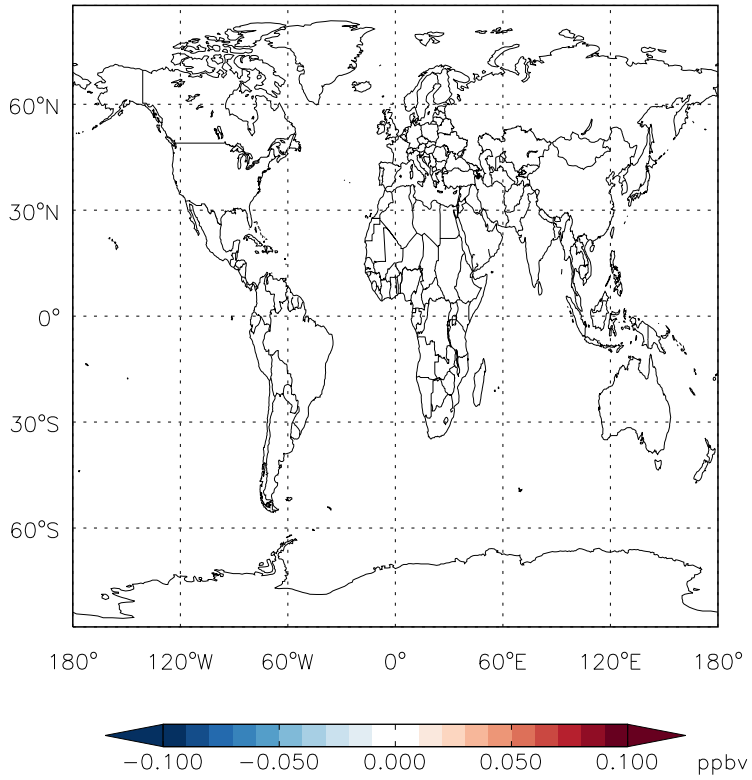
v11-01f-merra2-Run0 - v11-01d-Run1

PROPNN - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

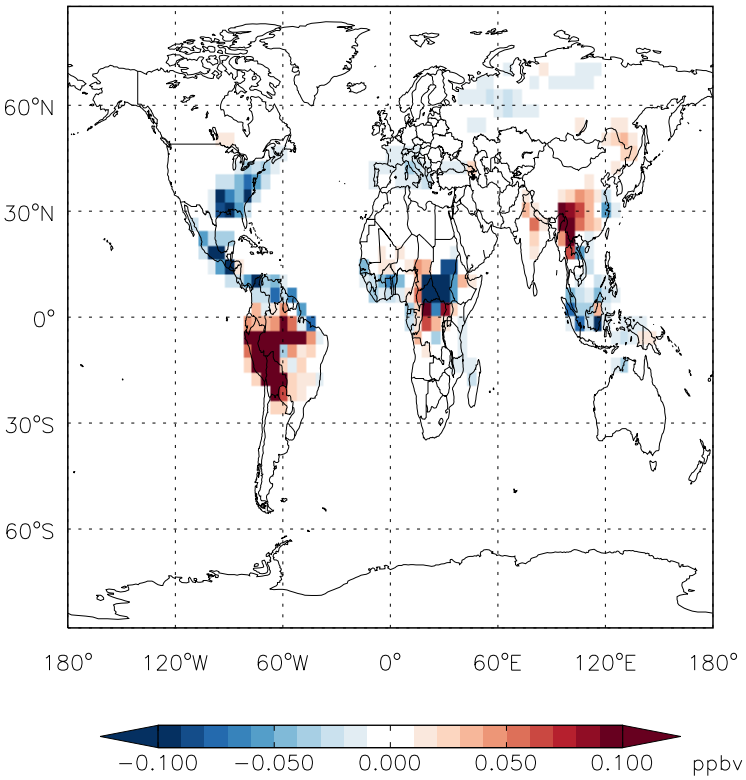
PROPNN- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

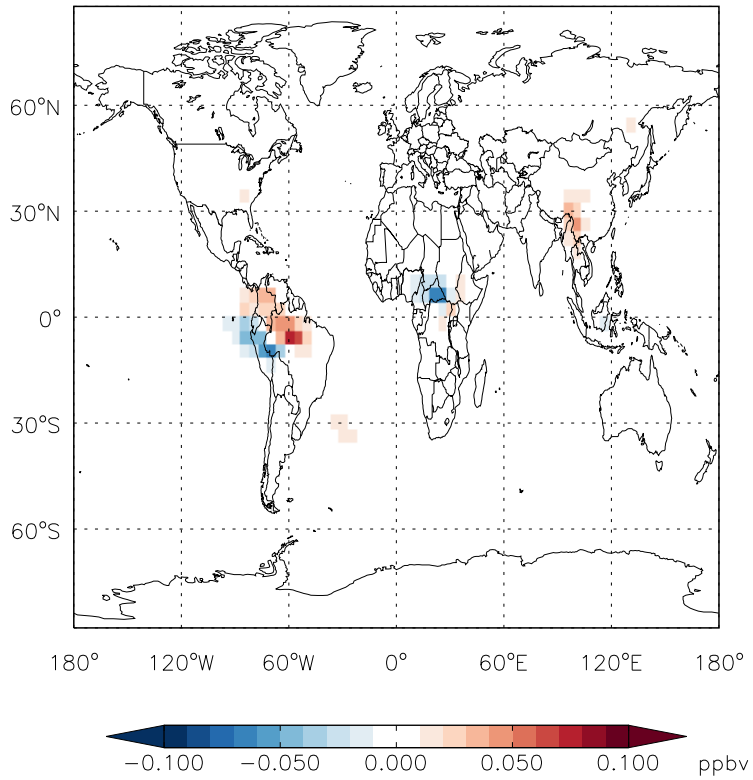
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

HAC − Diff @ Surface for Jul



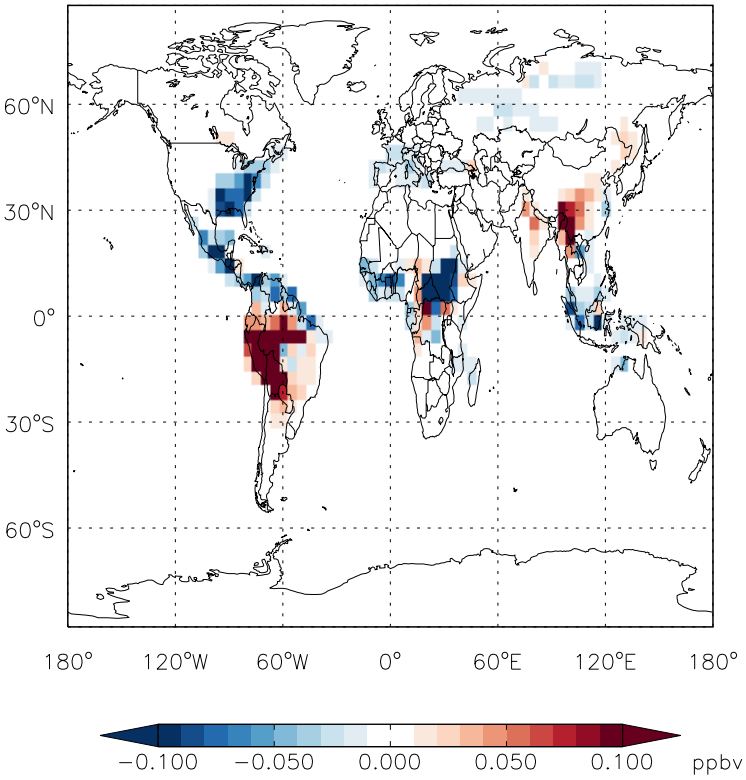
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

HAC− Diff @ 500 hPa for Jul



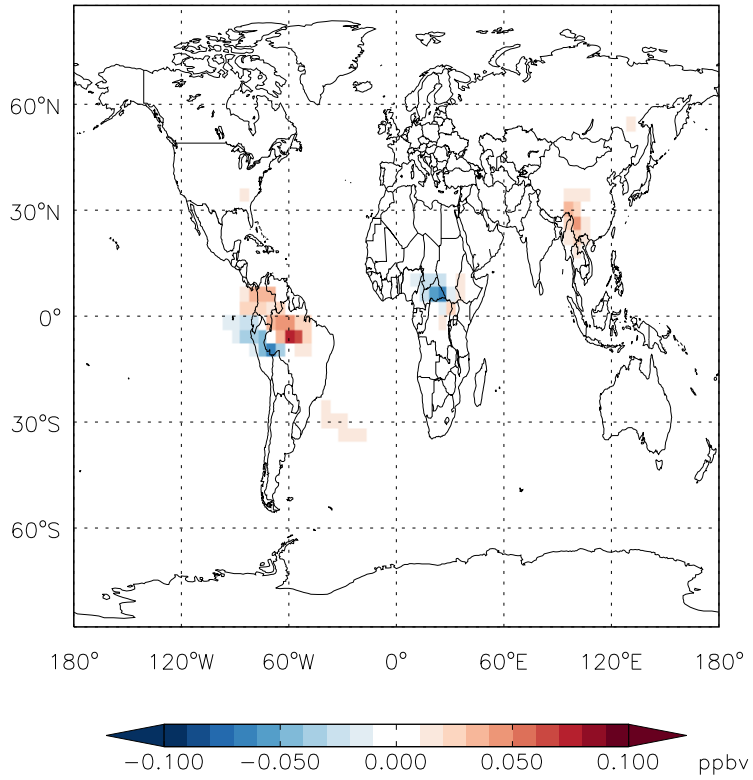
v11−01f−merra2−Run0 − v11−01d−Run1

HAC − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

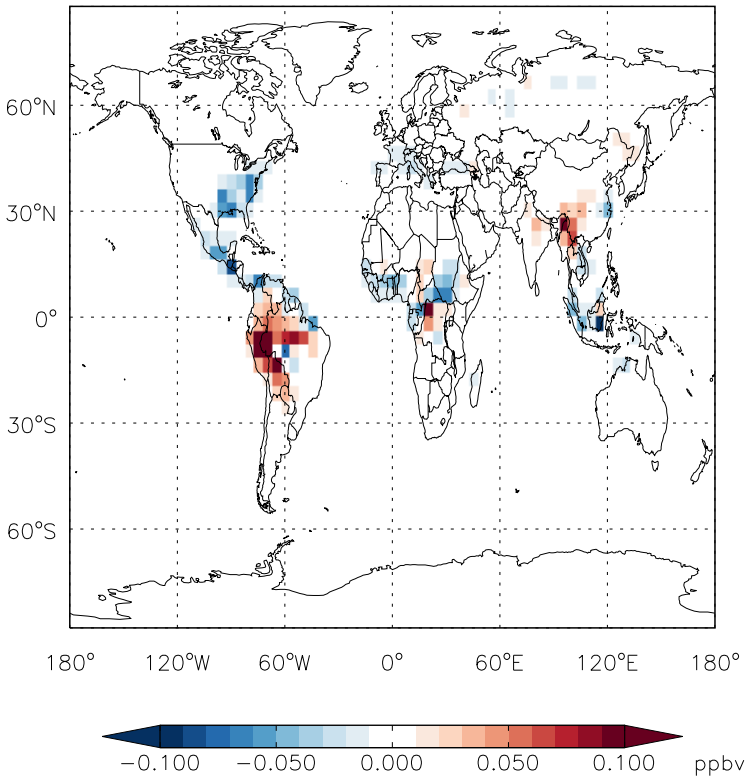
HAC− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

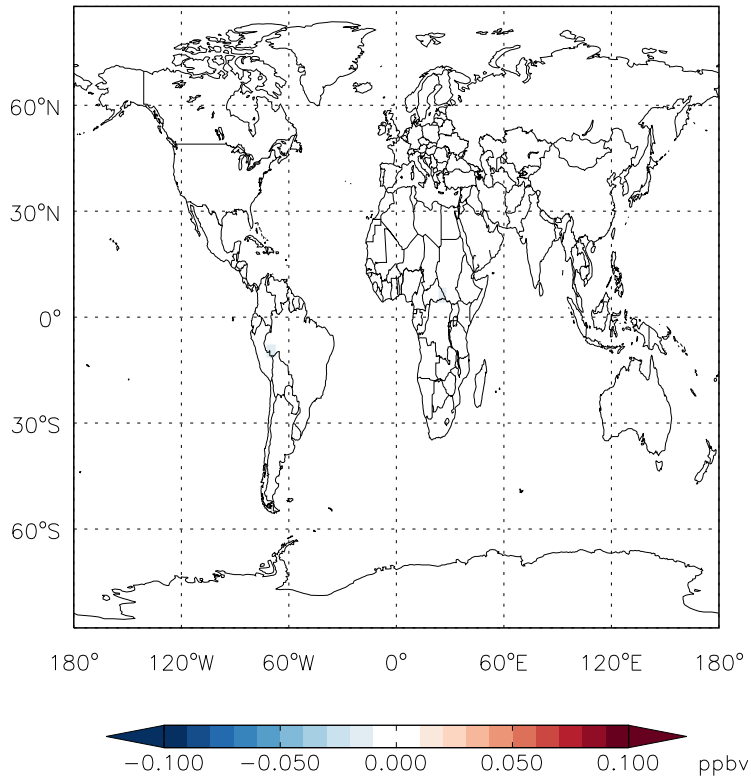
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

GLYC − Diff @ Surface for Jul



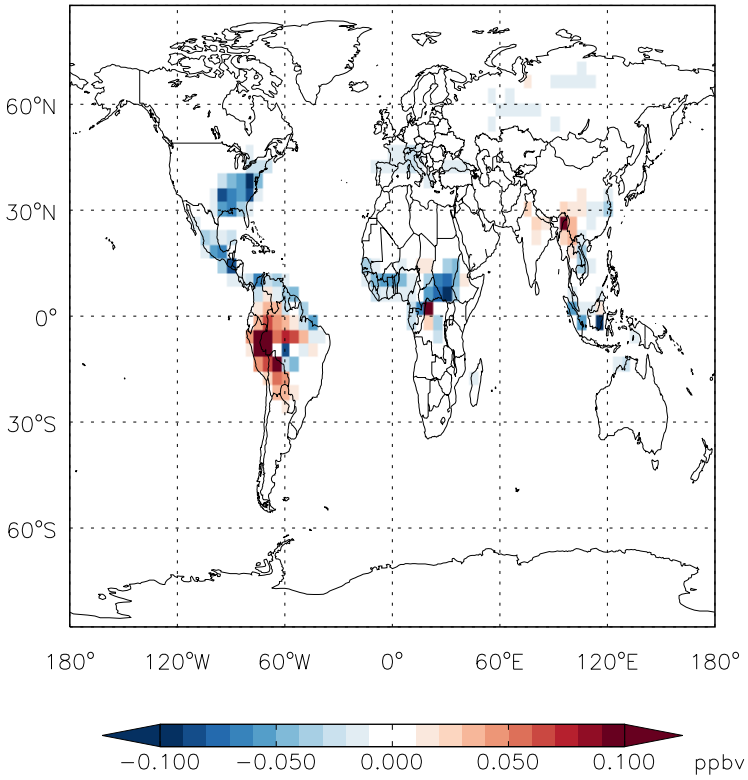
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

GLYC− Diff @ 500 hPa for Jul



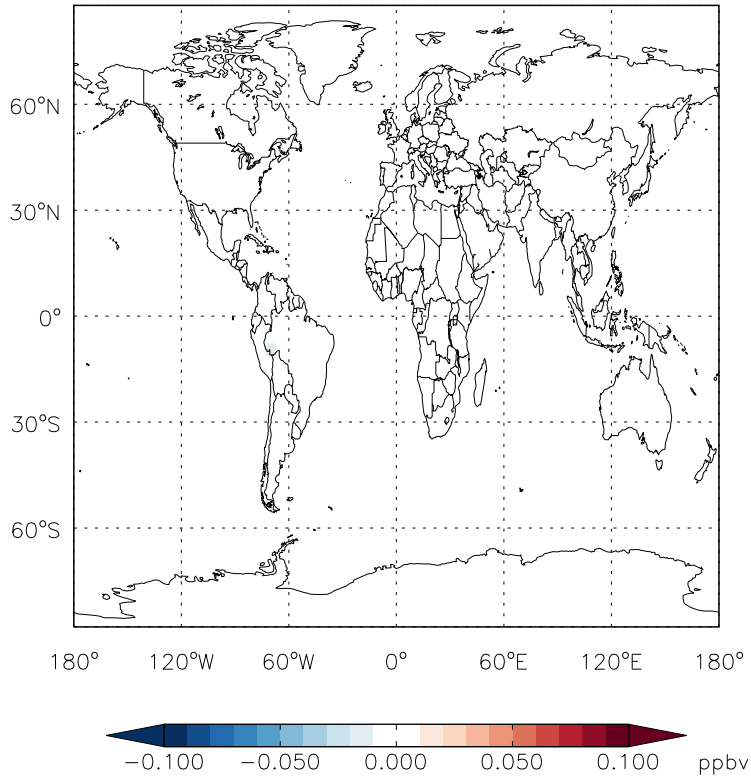
v11−01f−merra2−Run0 − v11−01d−Run1

GLYC − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

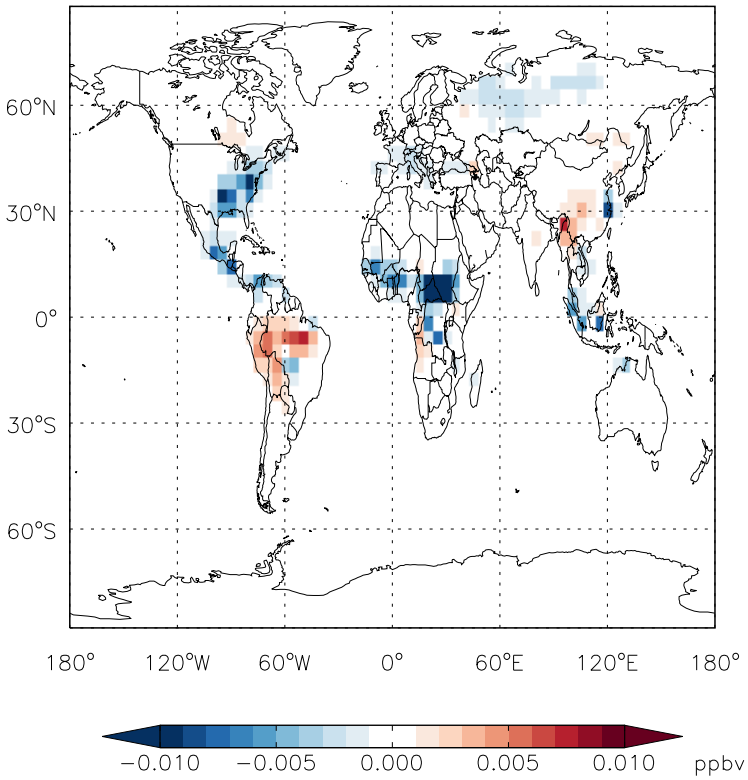
GLYC− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

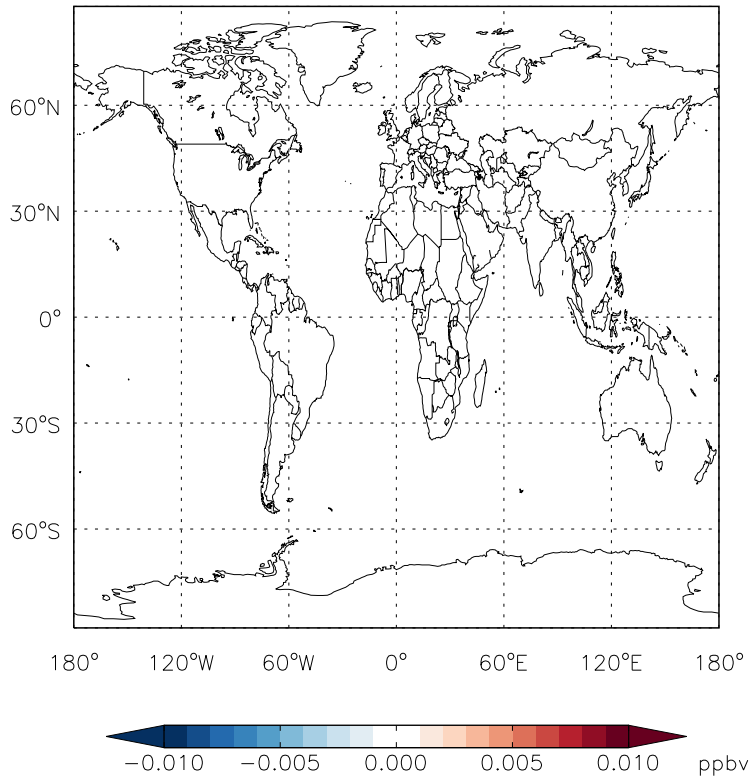
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MMN − Diff @ Surface for Jul



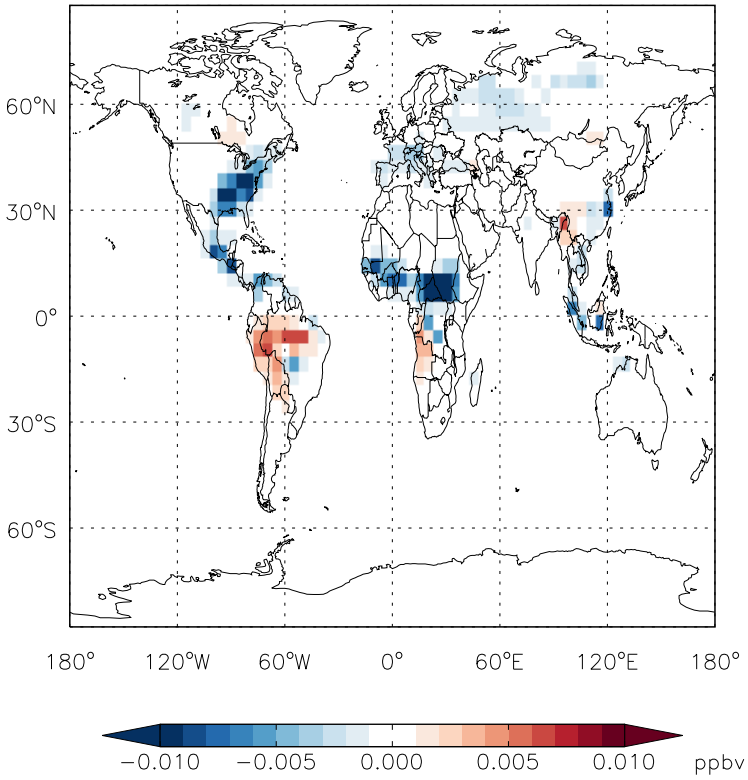
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

MMN− Diff @ 500 hPa for Jul



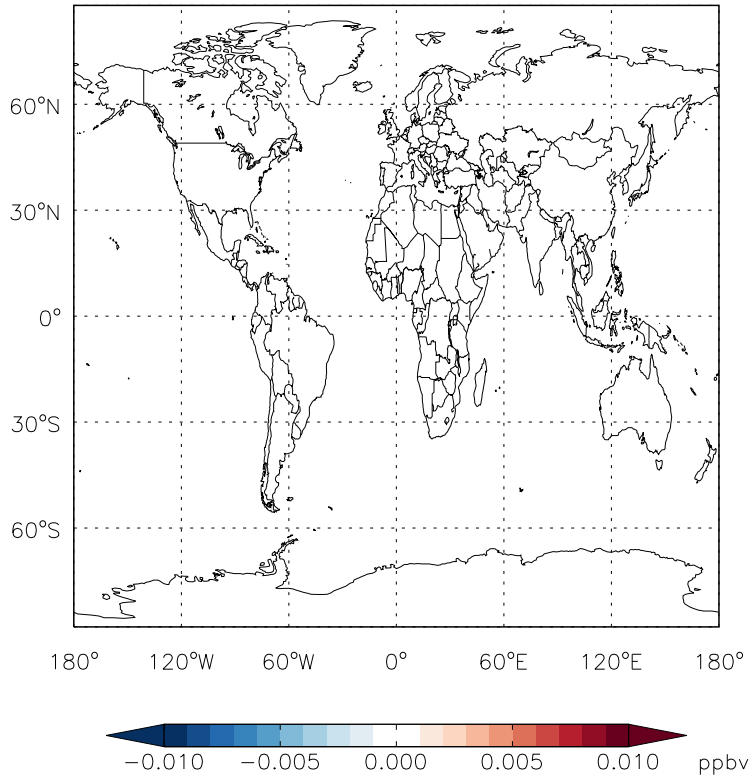
v11−01f−merra2−Run0 − v11−01d−Run1

MMN − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

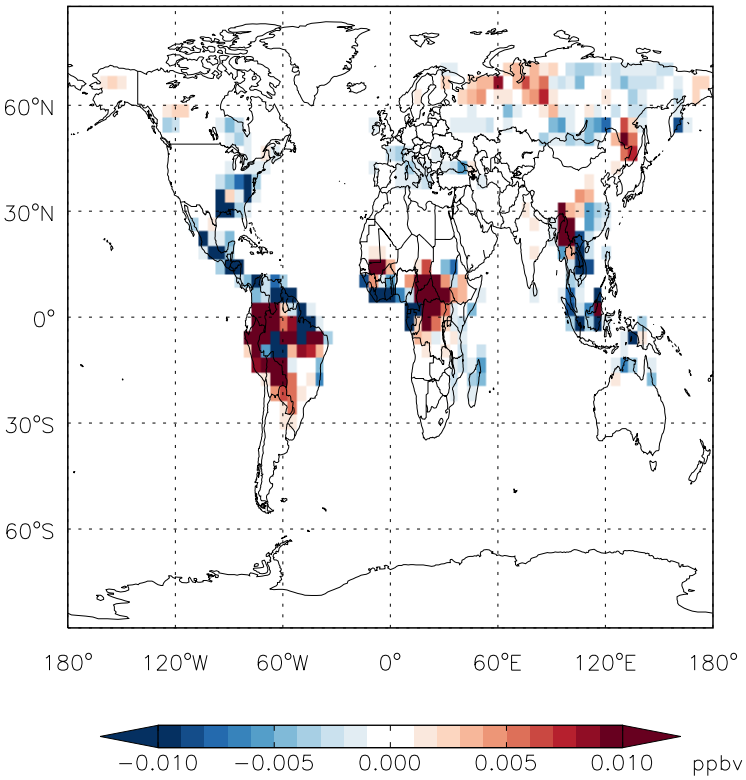
MMN− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

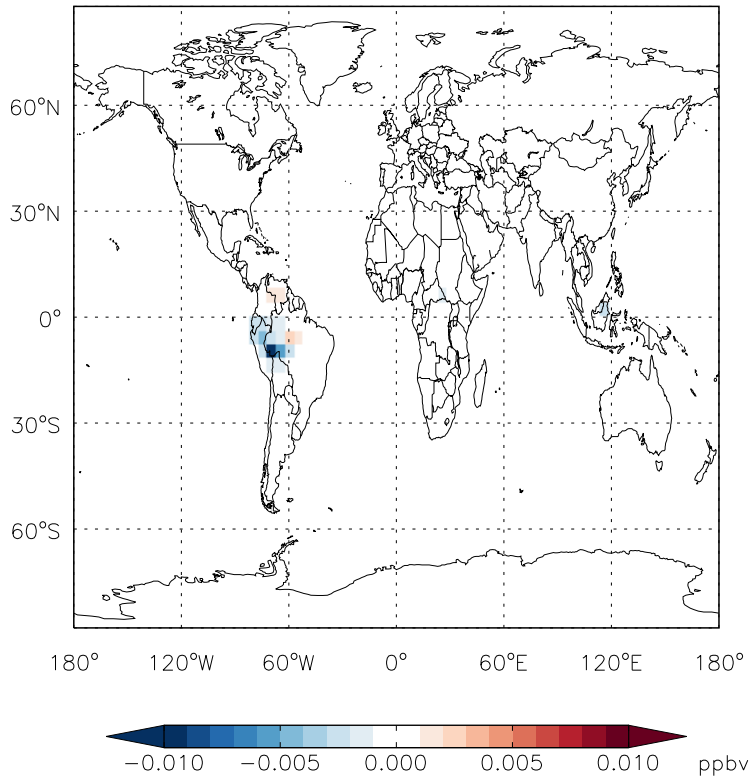
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

RIP − Diff @ Surface for Jul



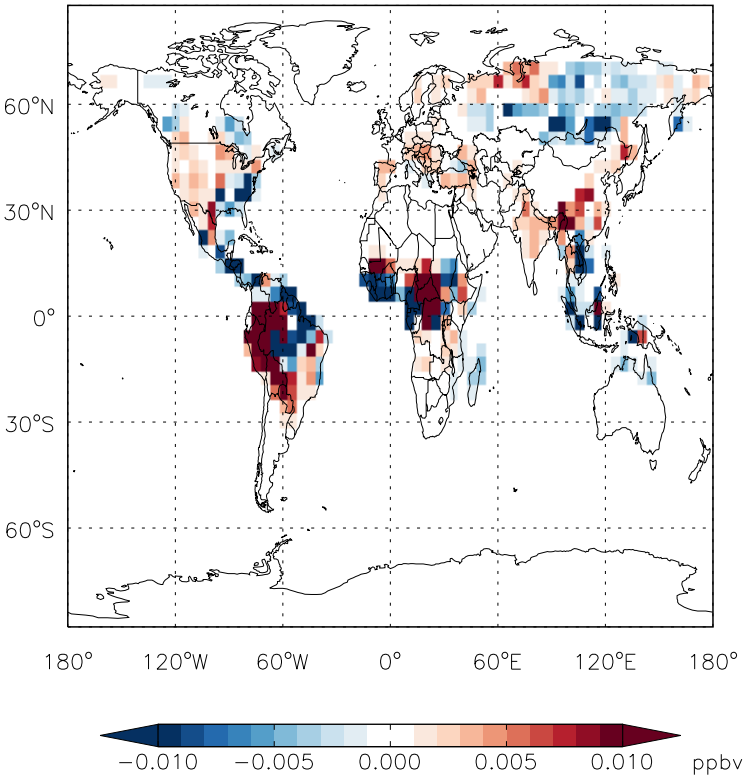
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

RIP− Diff @ 500 hPa for Jul



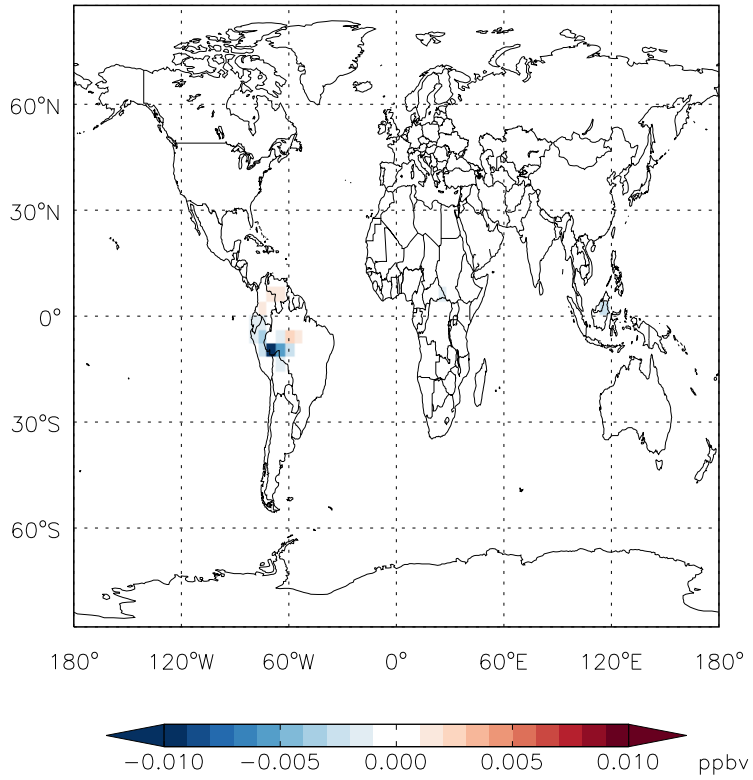
v11−01f−merra2−Run0 − v11−01d−Run1

RIP − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

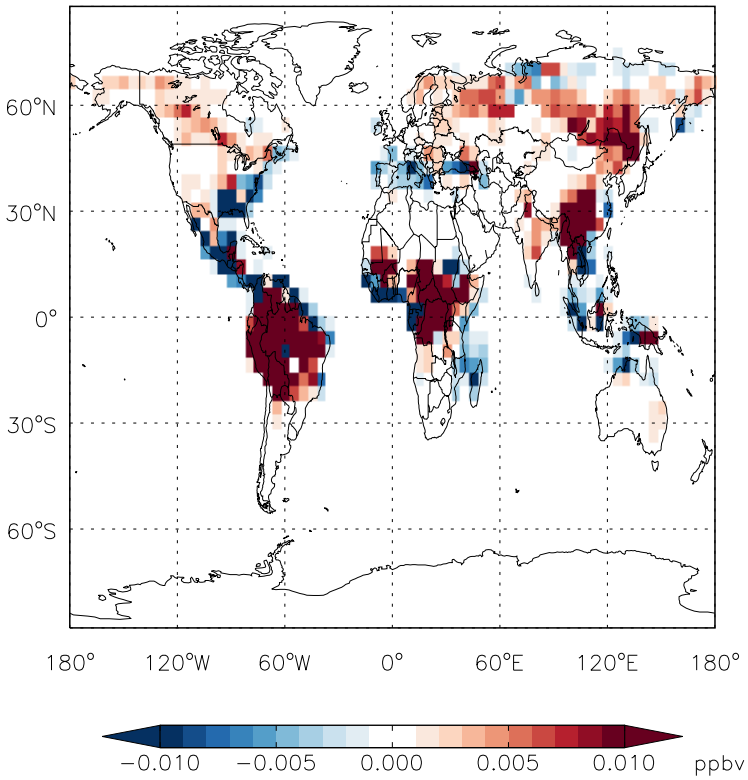
RIP− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

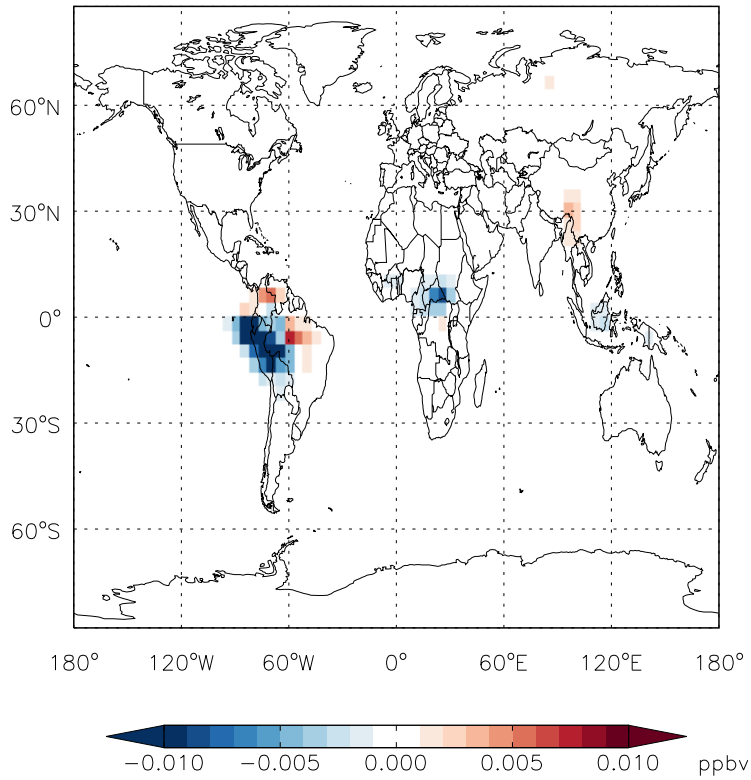
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

IEPOX − Diff @ Surface for Jul



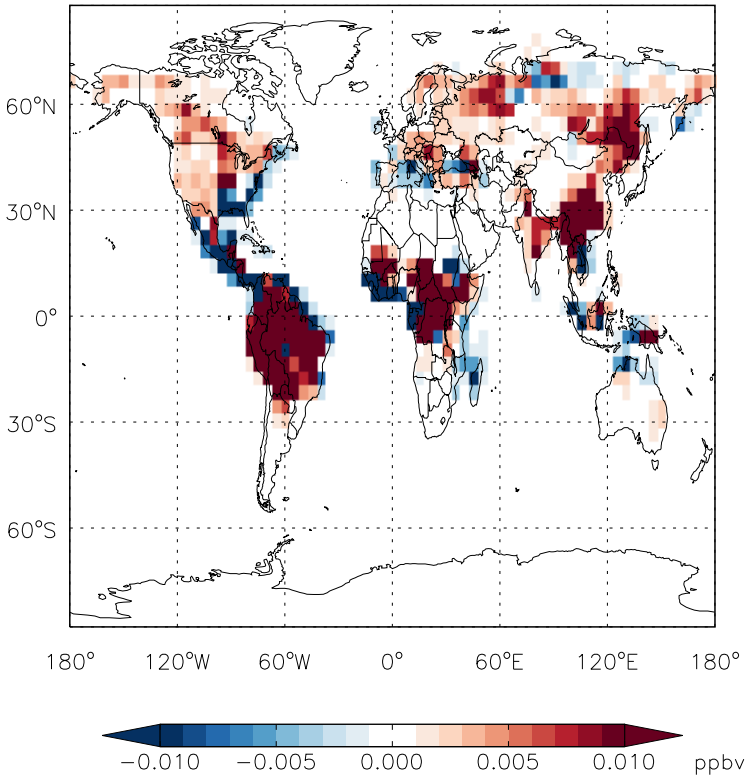
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

IEPOX− Diff @ 500 hPa for Jul



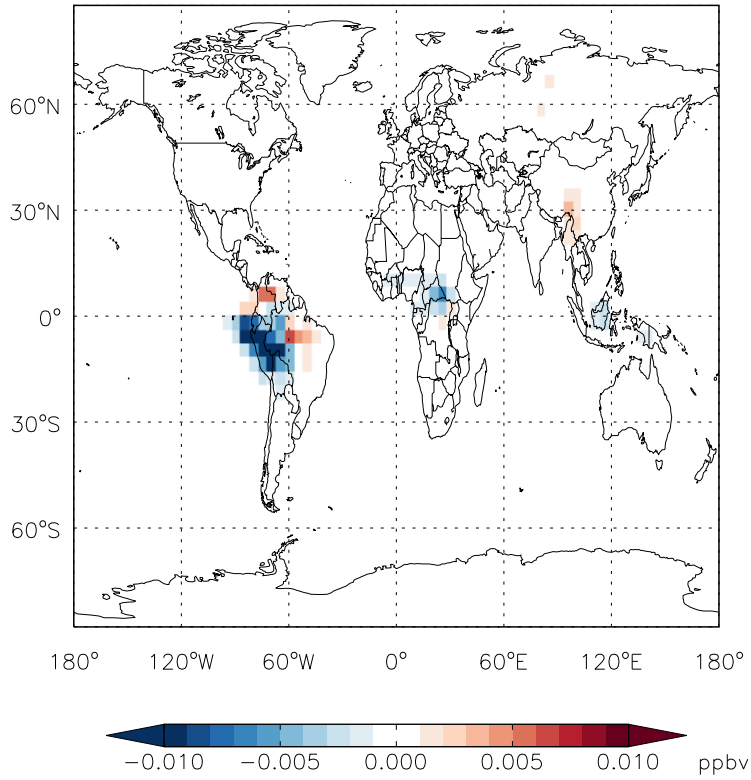
v11−01f−merra2−Run0 − v11−01d−Run1

IEPOX − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

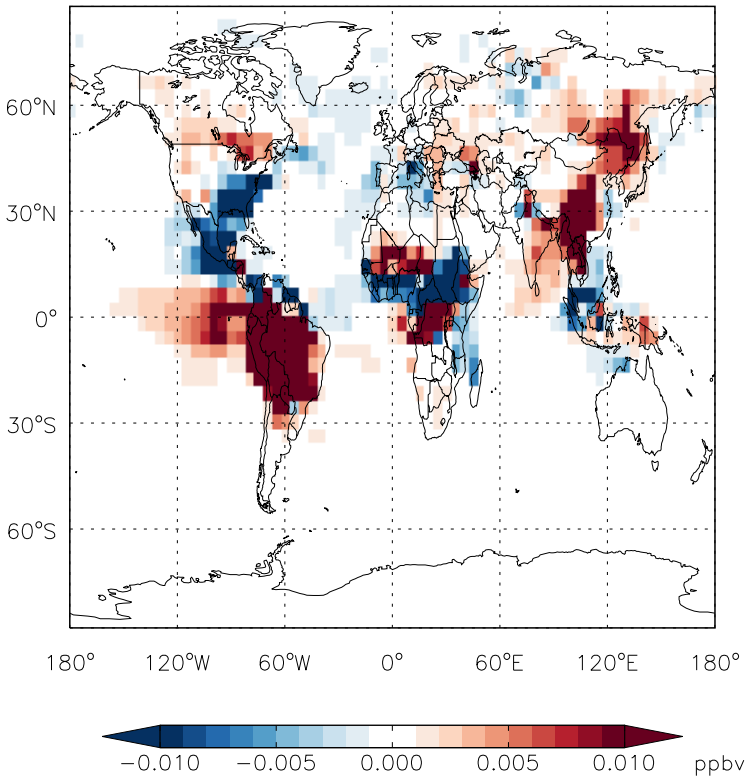
IEPOX− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

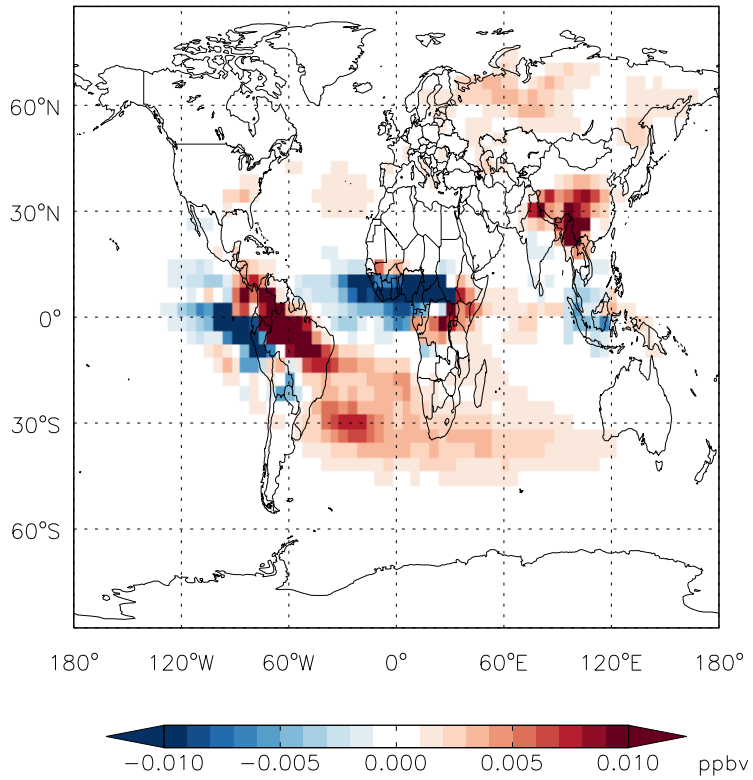
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MAP - Diff @ Surface for Jul



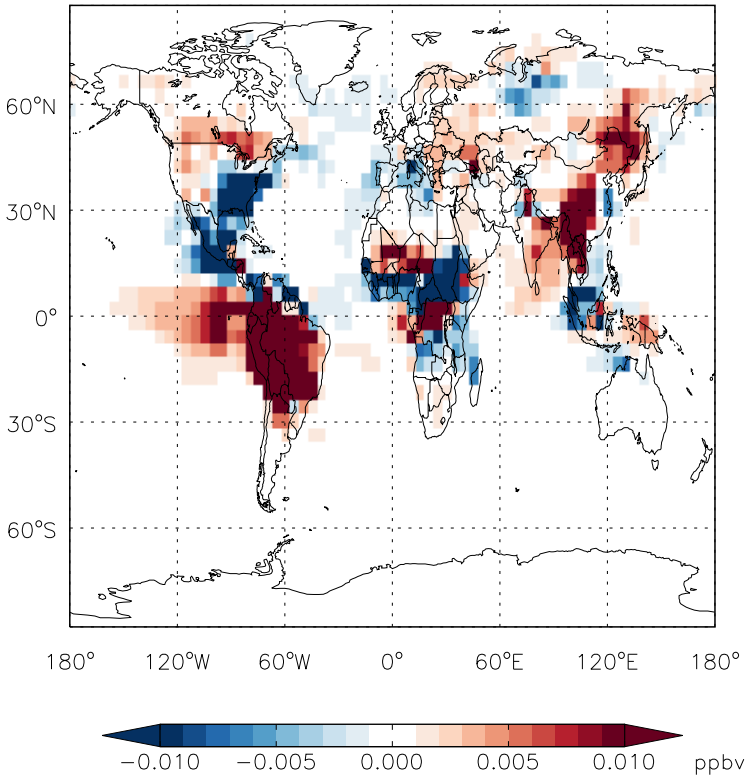
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

MAP- Diff @ 500 hPa for Jul



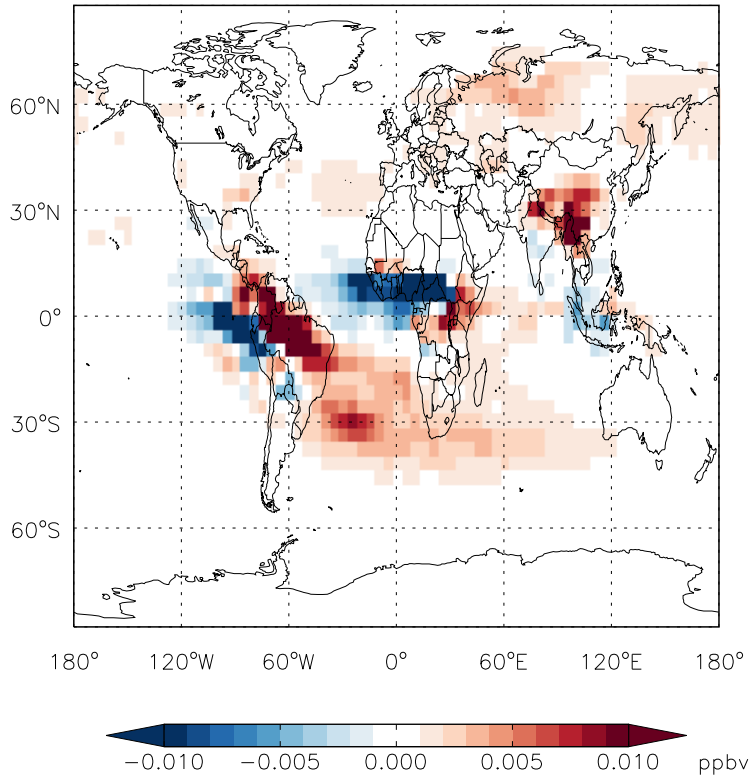
v11-01f-merra2-Run0 - v11-01d-Run1

MAP - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

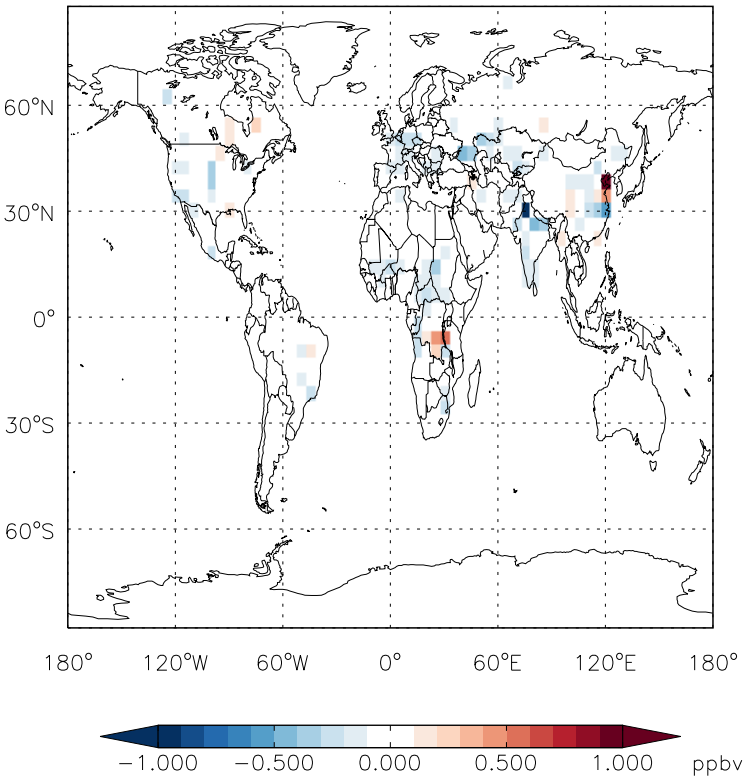
MAP- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

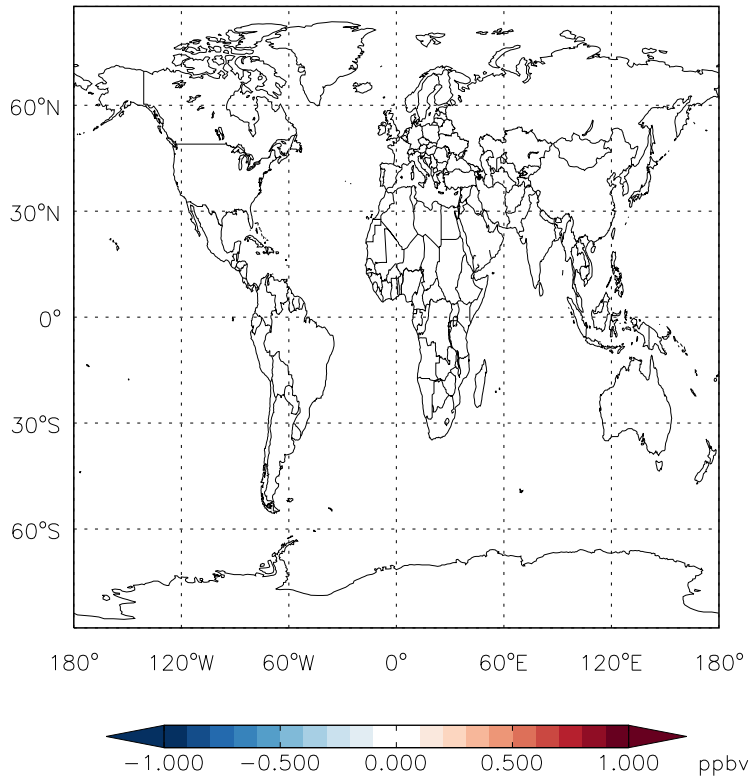
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NO2 − Diff @ Surface for Jul



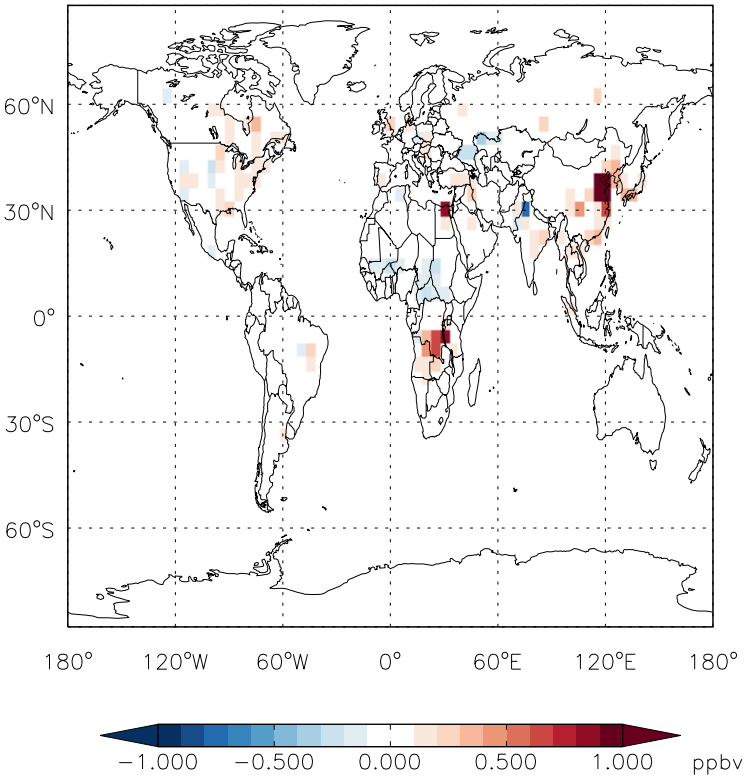
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

NO2− Diff @ 500 hPa for Jul



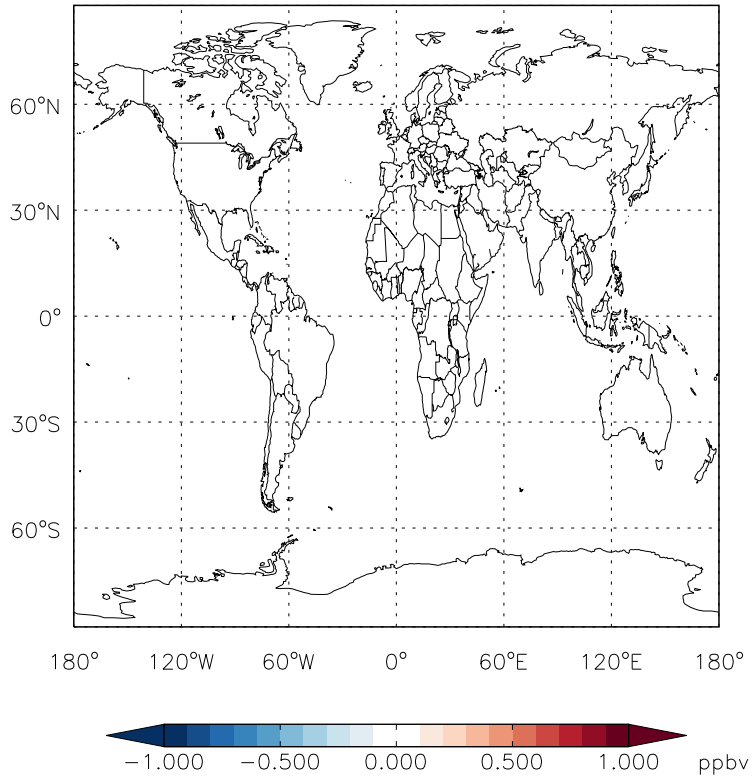
v11−01f−merra2−Run0 − v11−01d−Run1

NO2 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

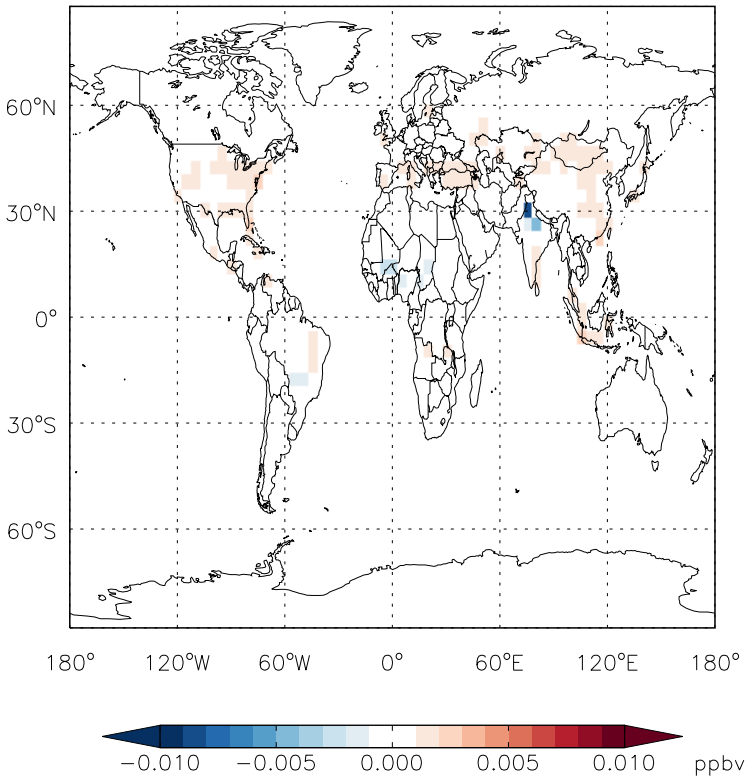
NO2− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

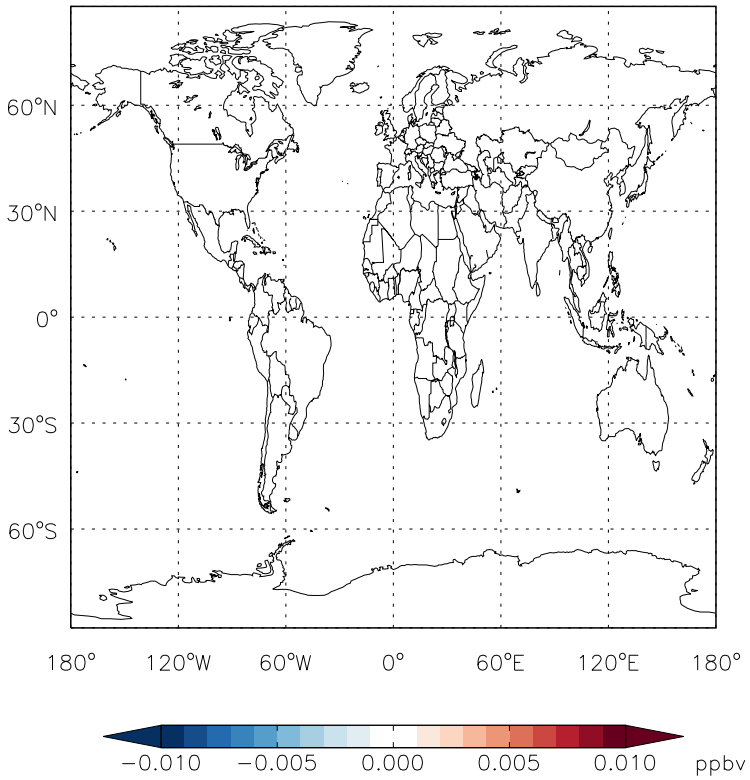
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

NO3 - Diff @ Surface for Jul



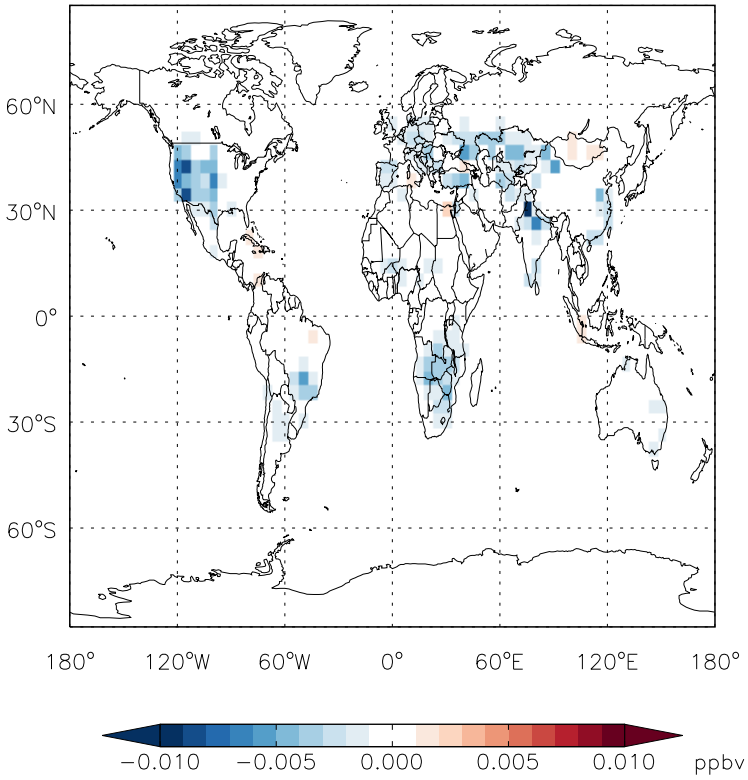
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

NO3- Diff @ 500 hPa for Jul



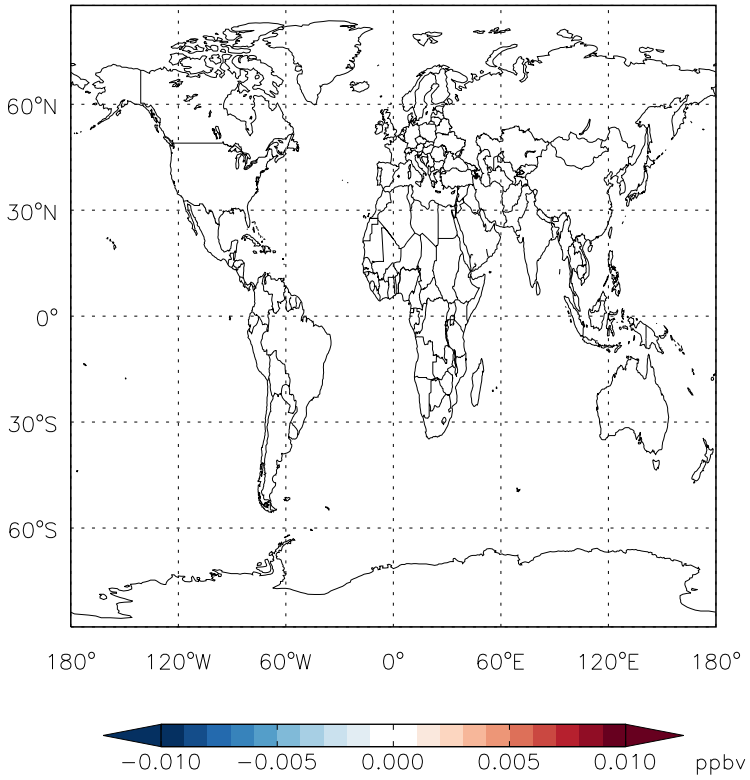
v11-01f-merra2-Run0 - v11-01d-Run1

NO3 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

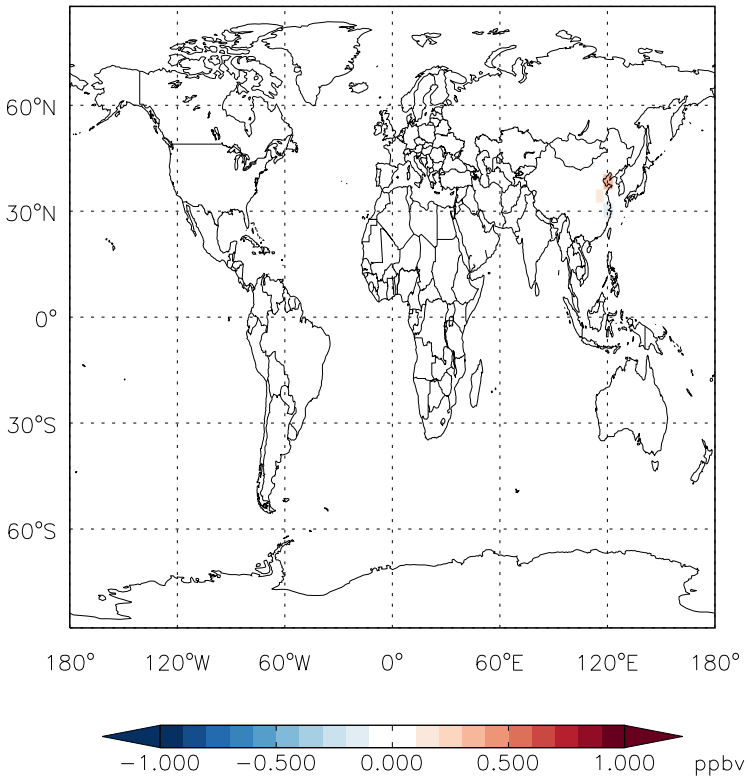
NO3- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

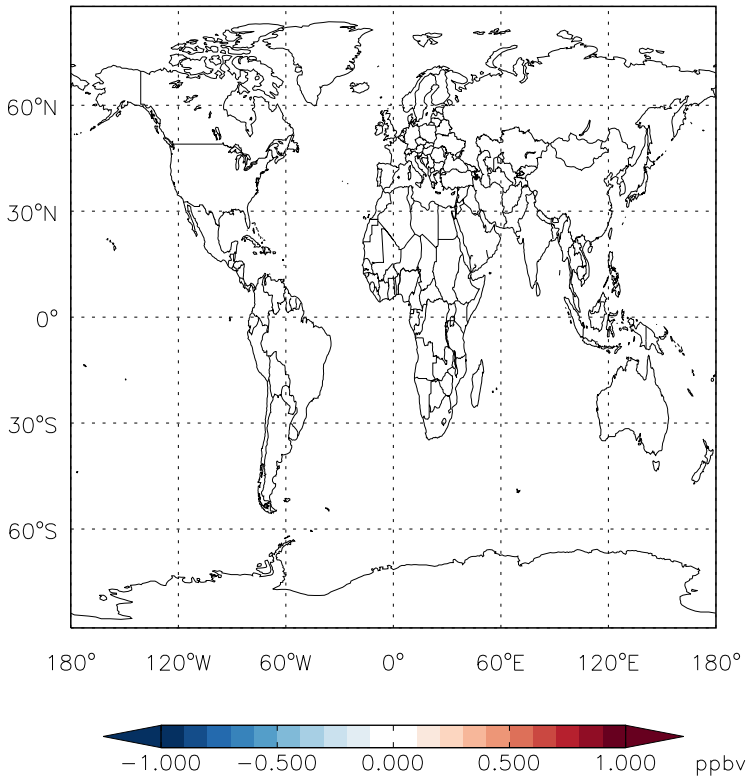
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HNO2 - Diff @ Surface for Jul



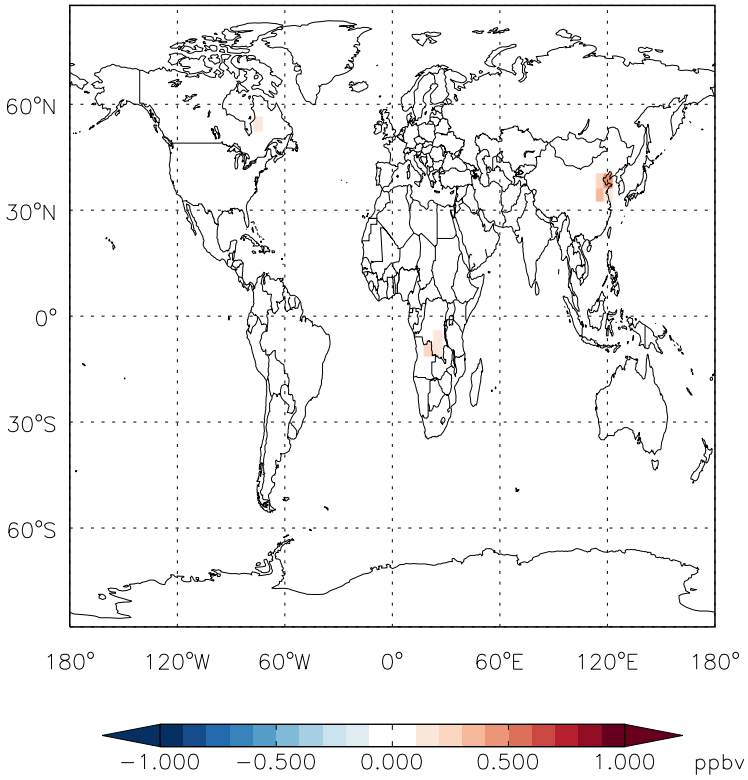
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HNO2- Diff @ 500 hPa for Jul



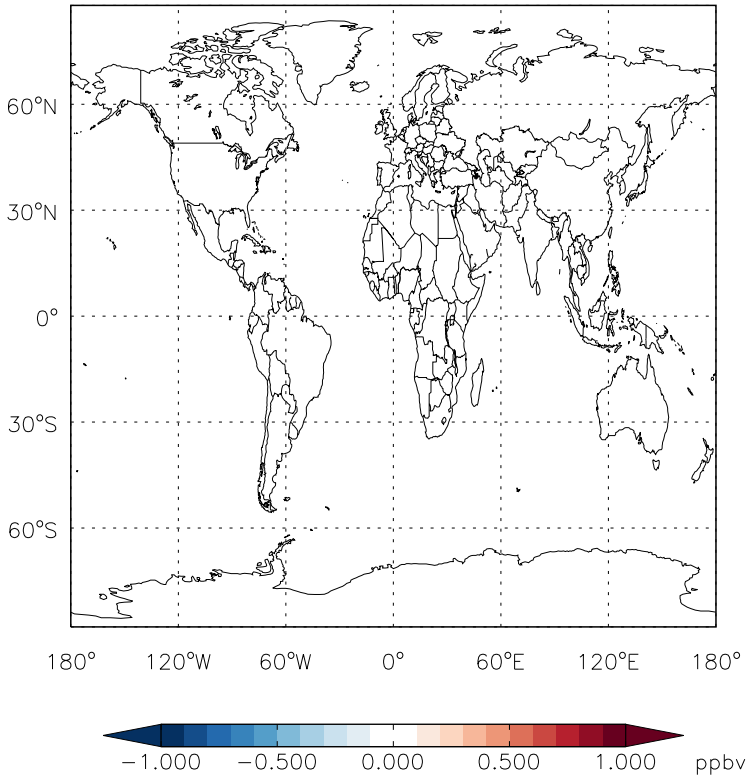
v11-01f-merra2-Run0 - v11-01d-Run1

HNO2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

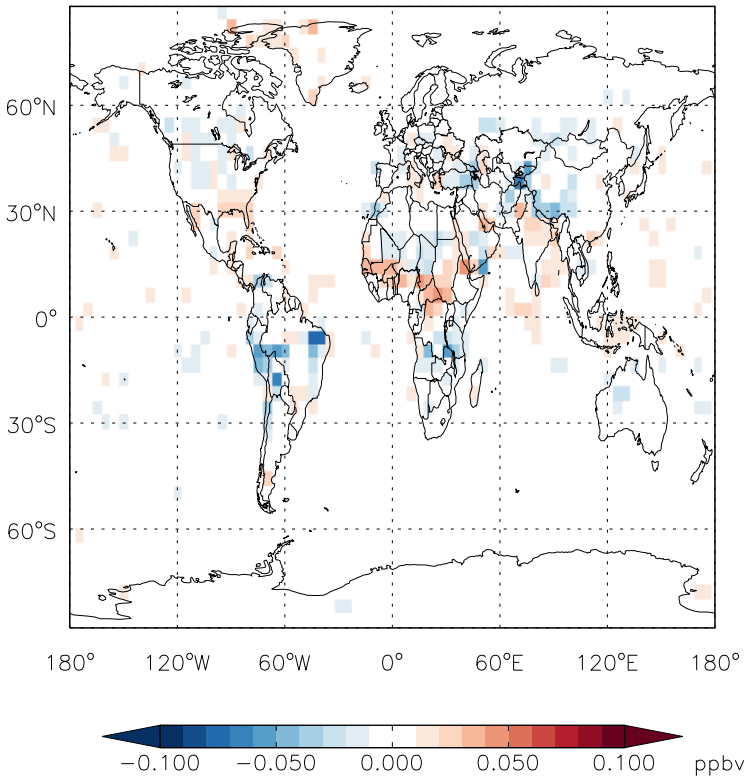
HNO2- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

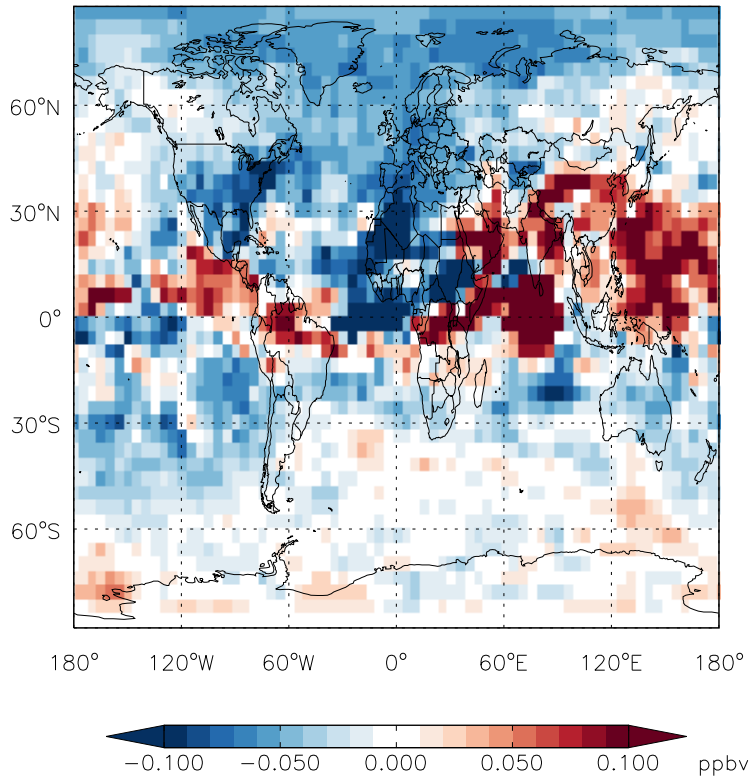
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

N2O − Diff @ Surface for Jul



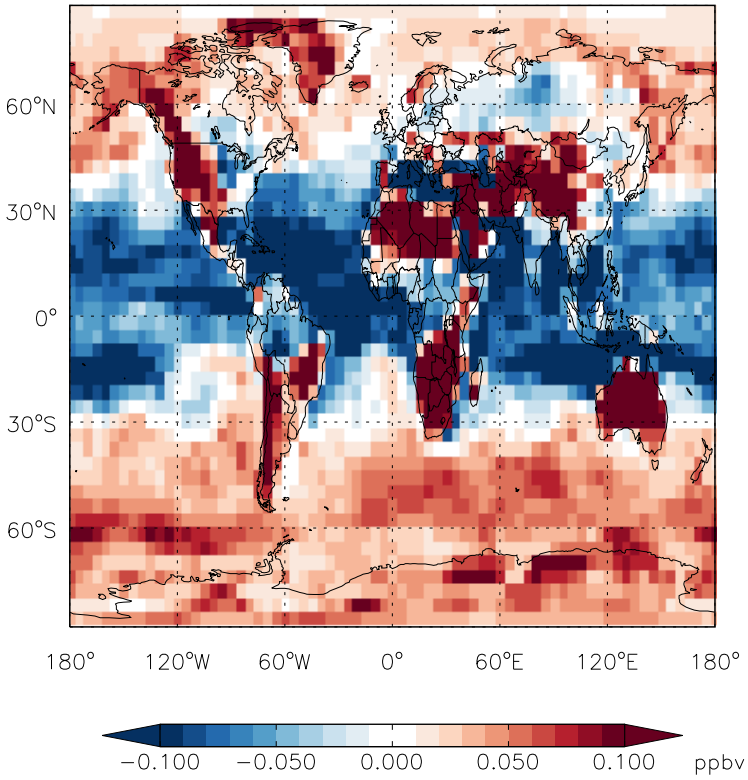
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

N2O− Diff @ 500 hPa for Jul



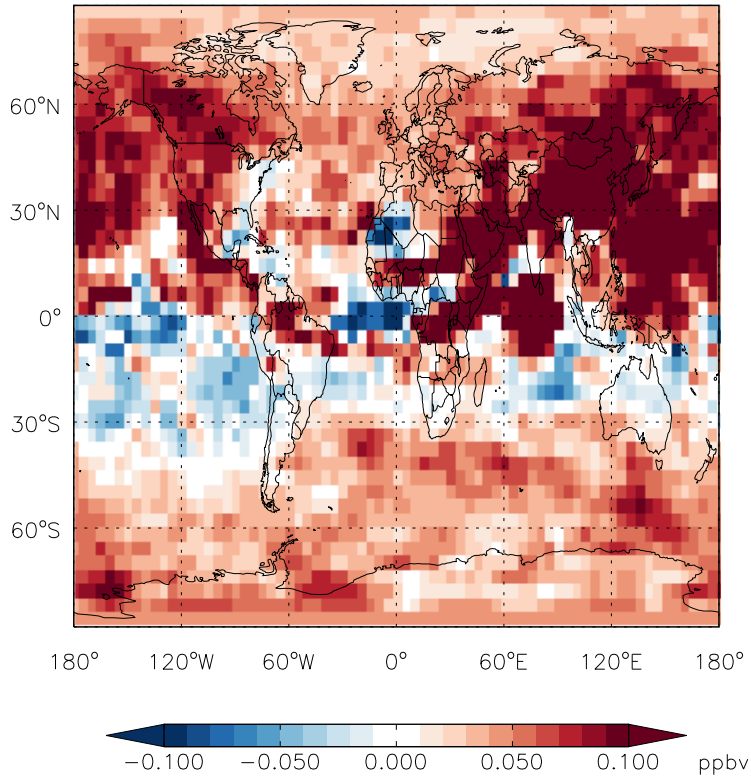
v11−01f−merra2−Run0 − v11−01d−Run1

N2O − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

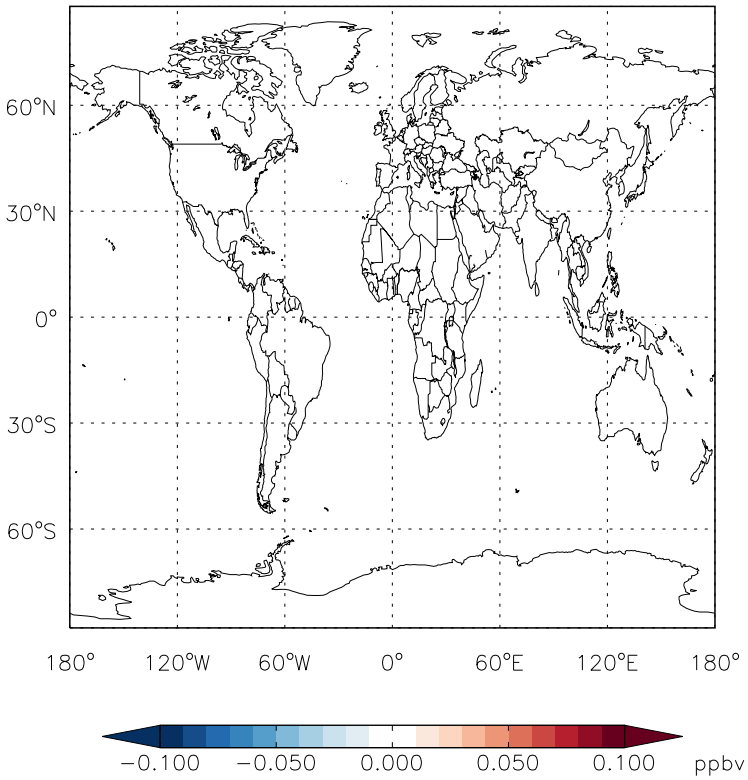
N2O− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

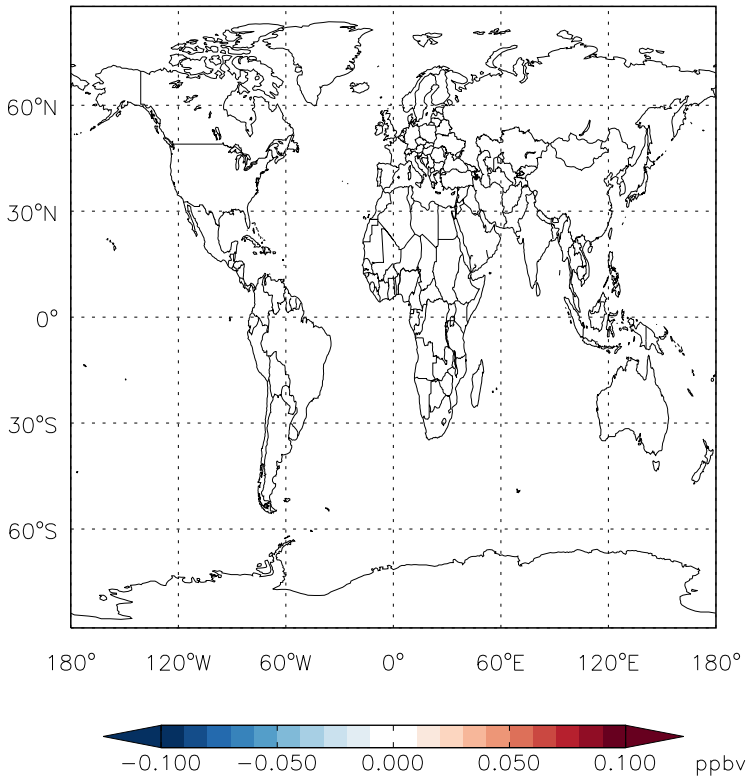
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

OCS - Diff @ Surface for Jul



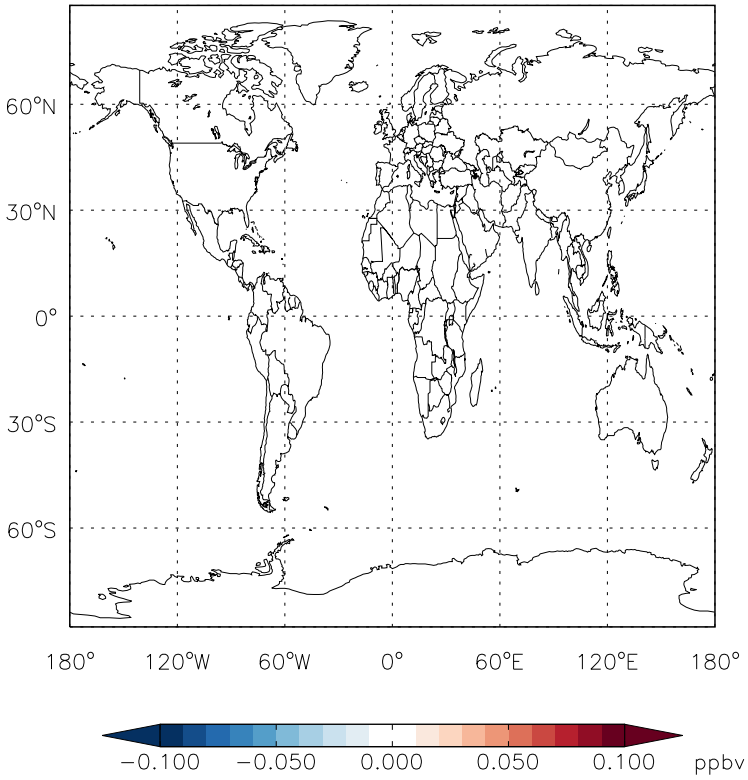
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

OCS- Diff @ 500 hPa for Jul



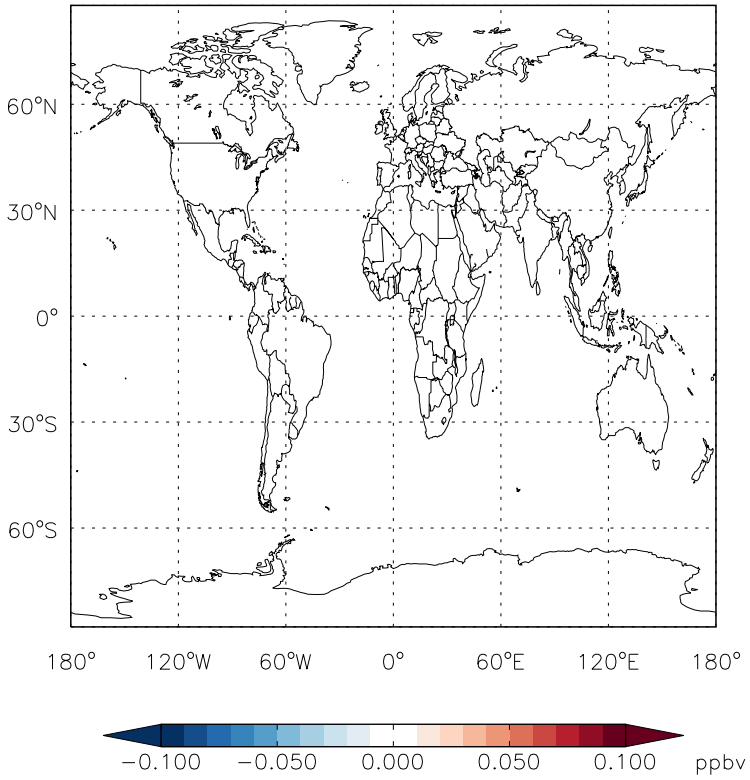
v11-01f-merra2-Run0 - v11-01d-Run1

OCS - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

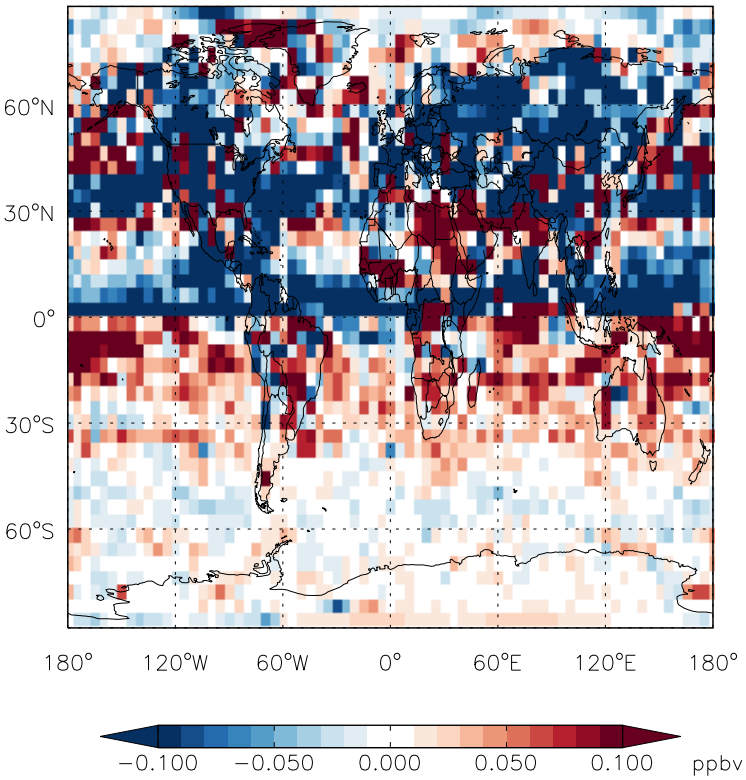
OCS- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

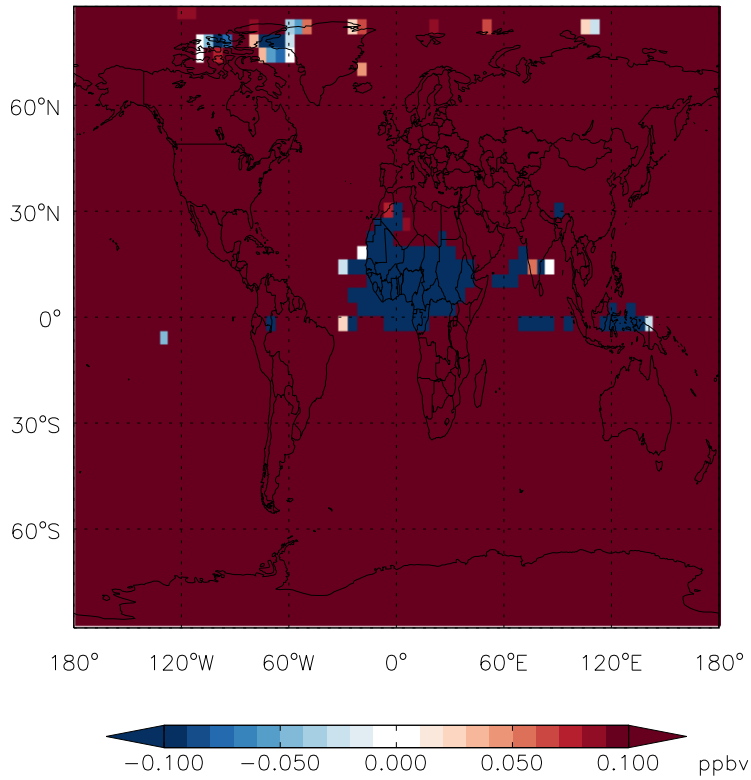
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH4 − Diff @ Surface for Jul



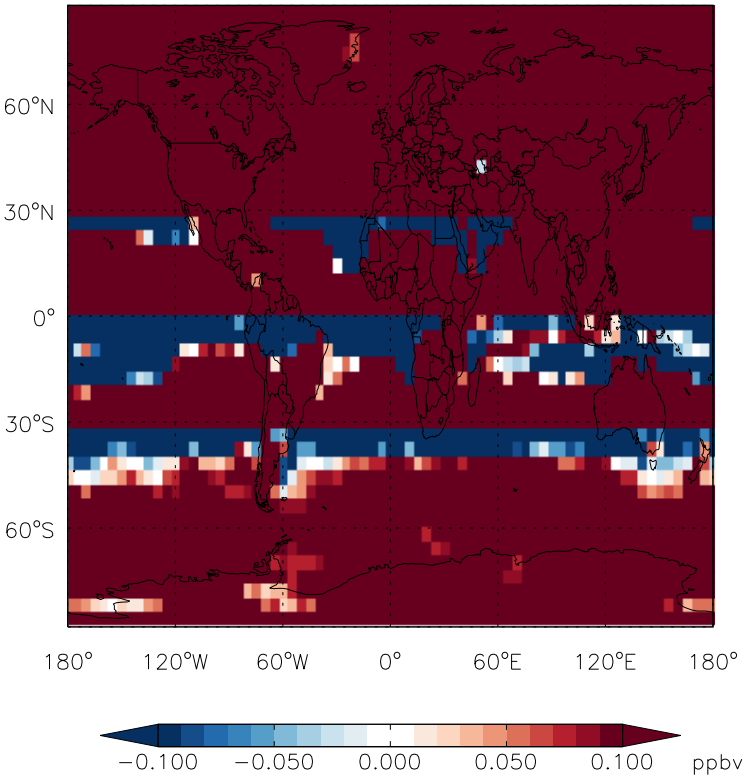
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH4− Diff @ 500 hPa for Jul



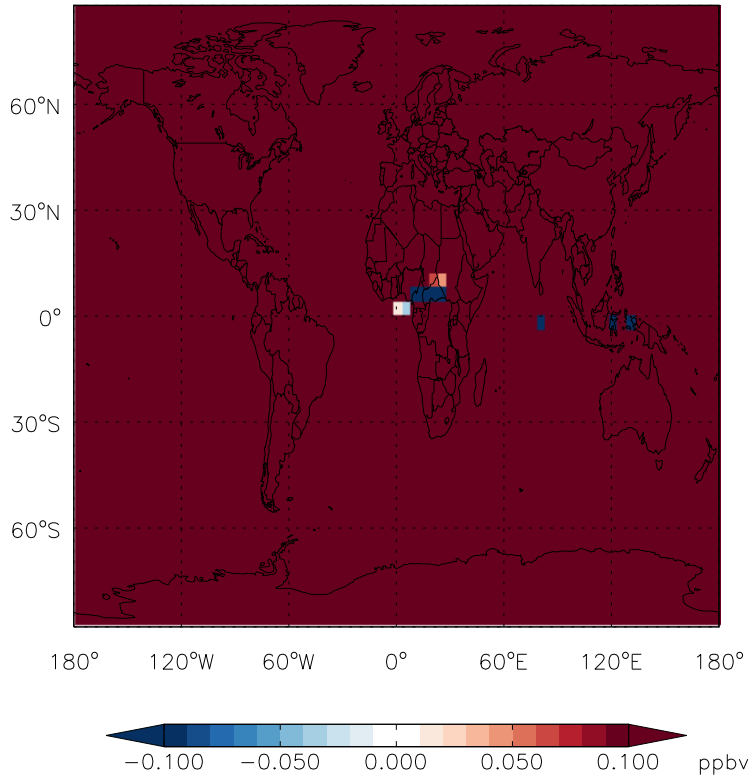
v11−01f−merra2−Run0 − v11−01d−Run1

CH4 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

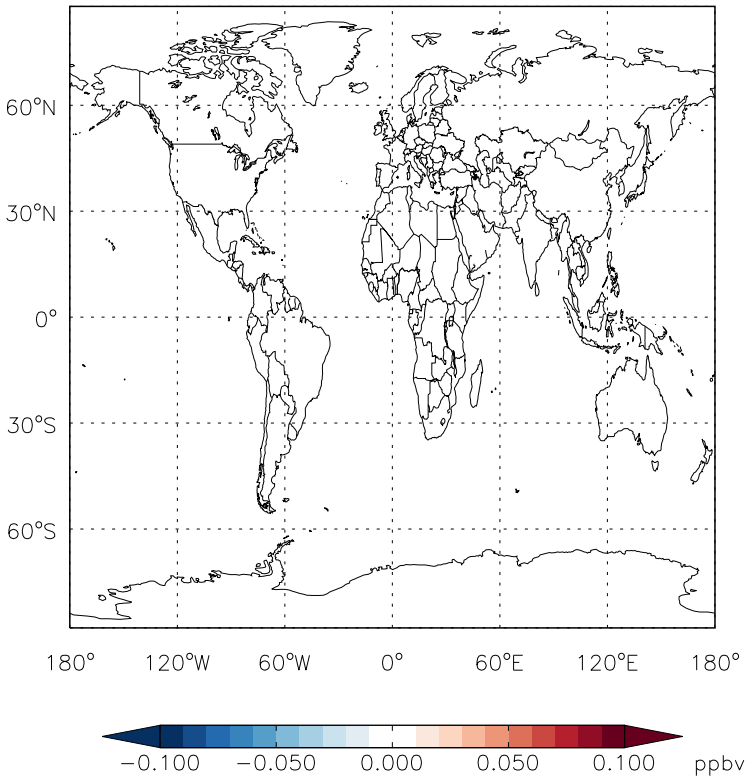
CH4− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

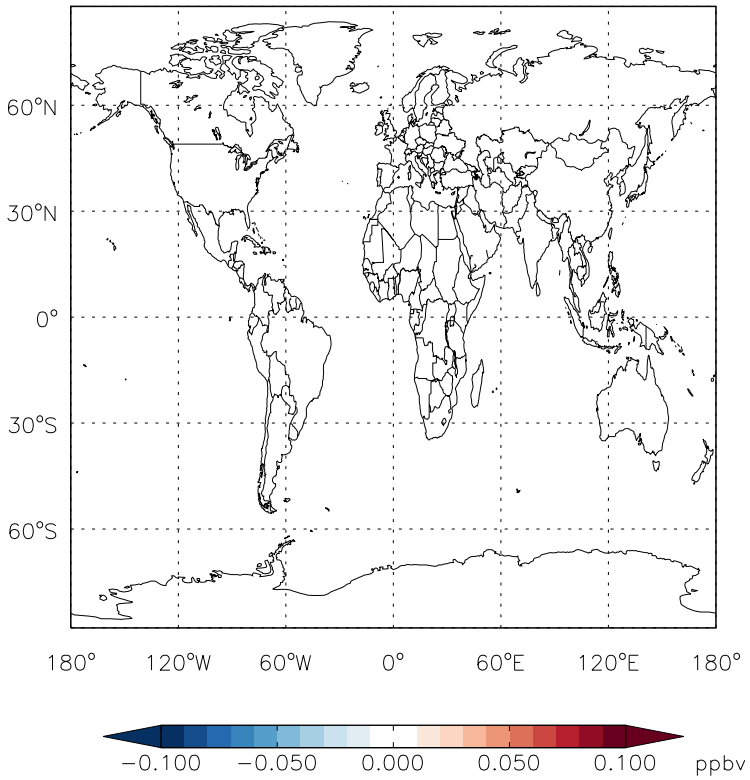
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BrCl - Diff @ Surface for Jul



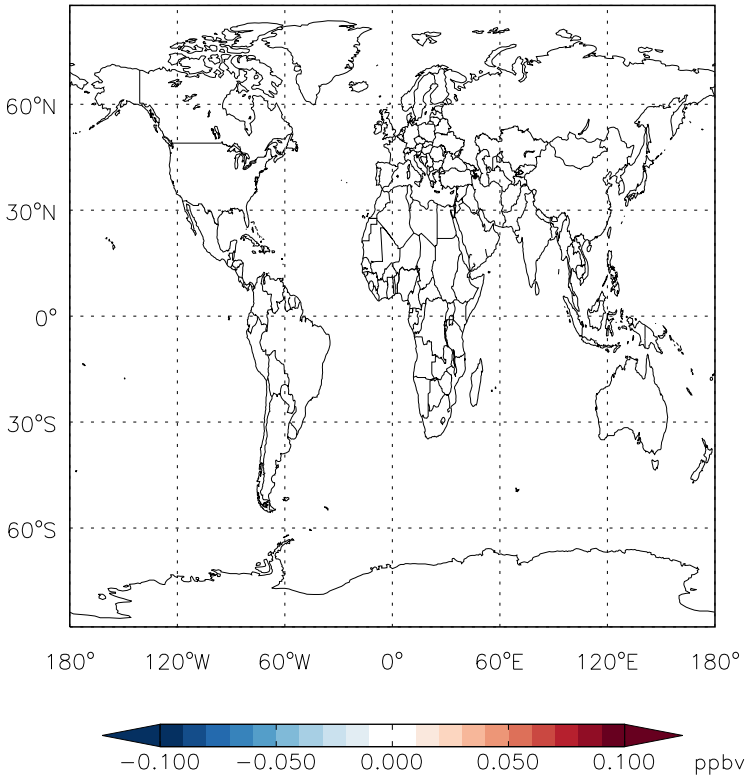
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

BrCl- Diff @ 500 hPa for Jul



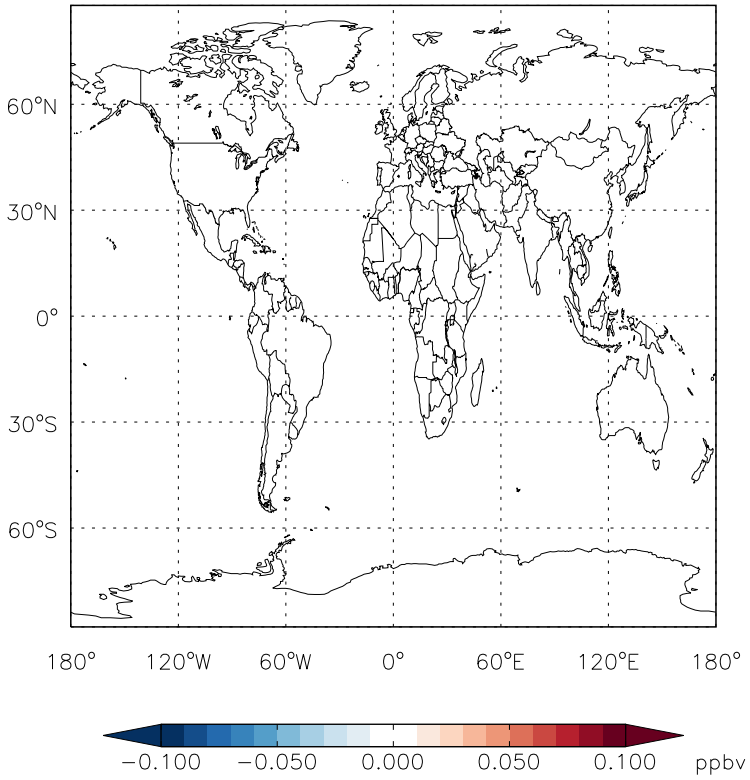
v11-01f-merra2-Run0 - v11-01d-Run1

BrCl - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

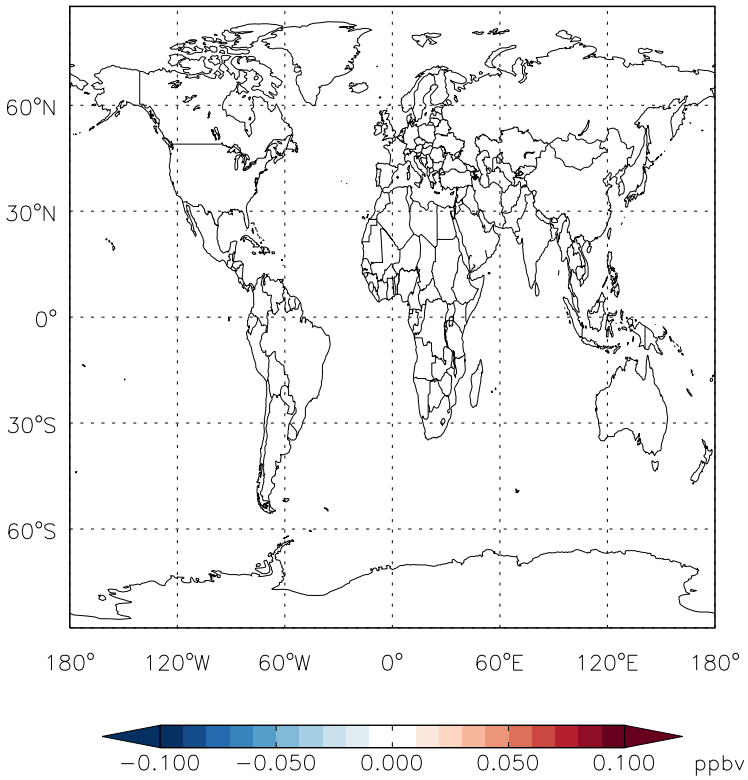
BrCl- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

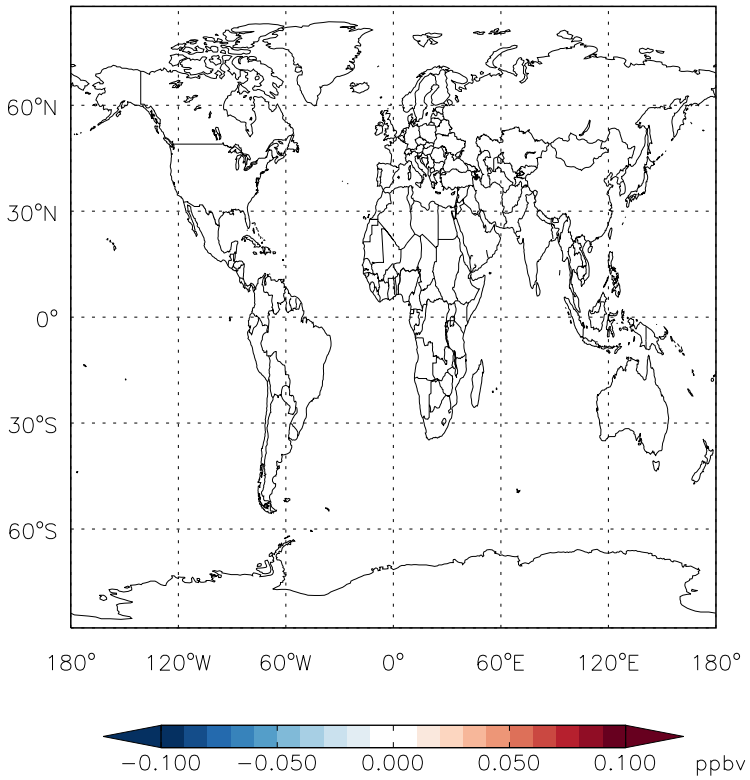
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HCl - Diff @ Surface for Jul



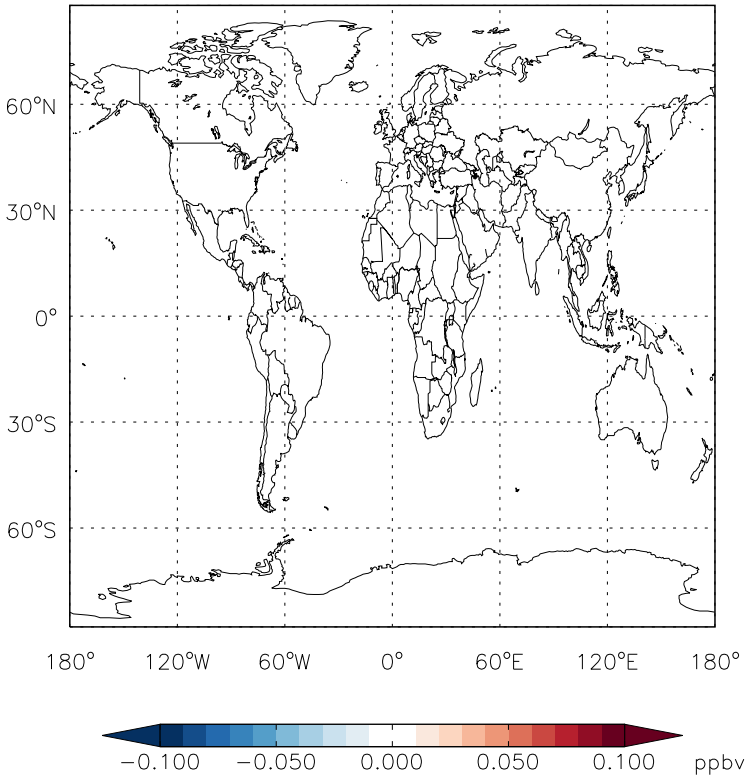
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HCl- Diff @ 500 hPa for Jul



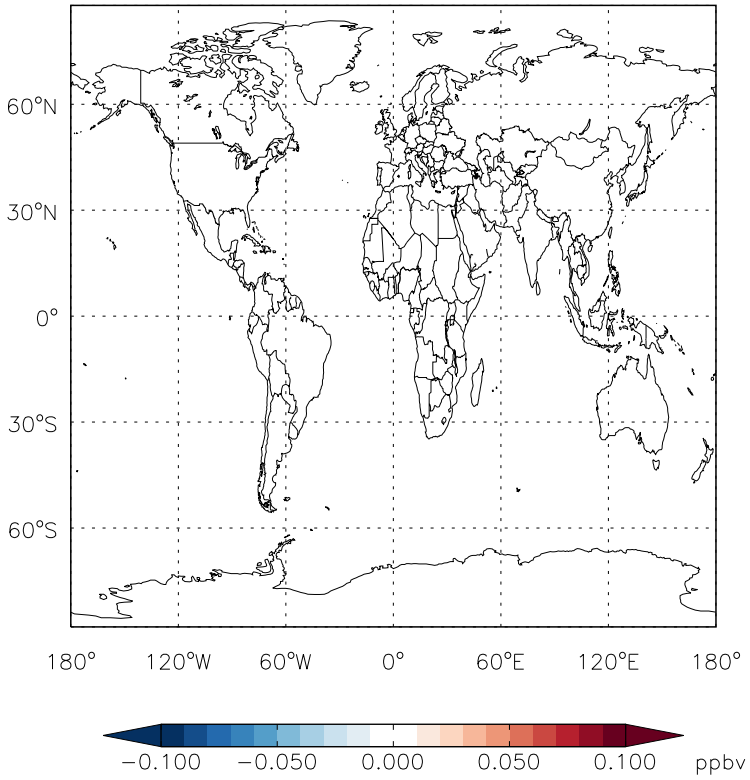
v11-01f-merra2-Run0 - v11-01d-Run1

HCl - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

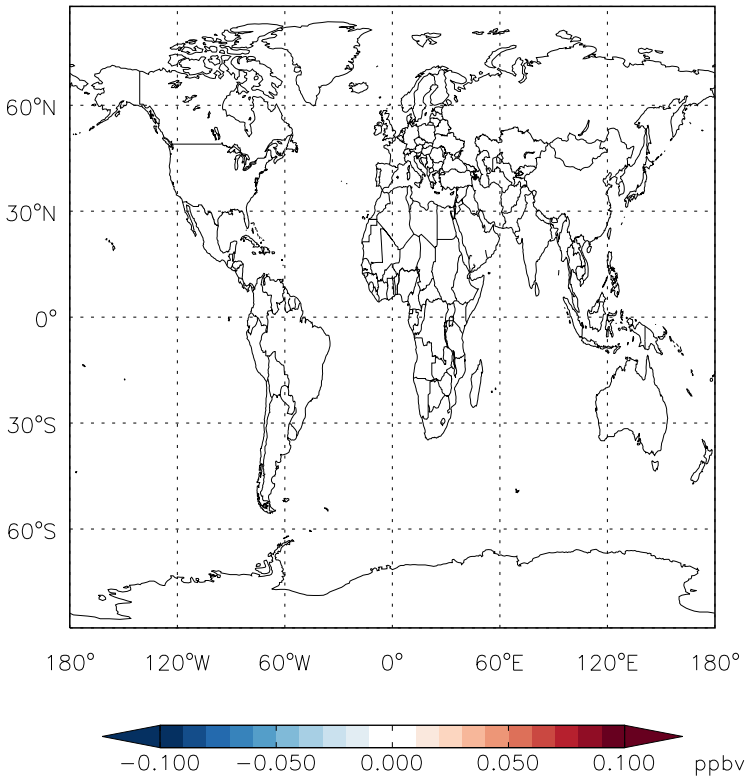
HCl- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

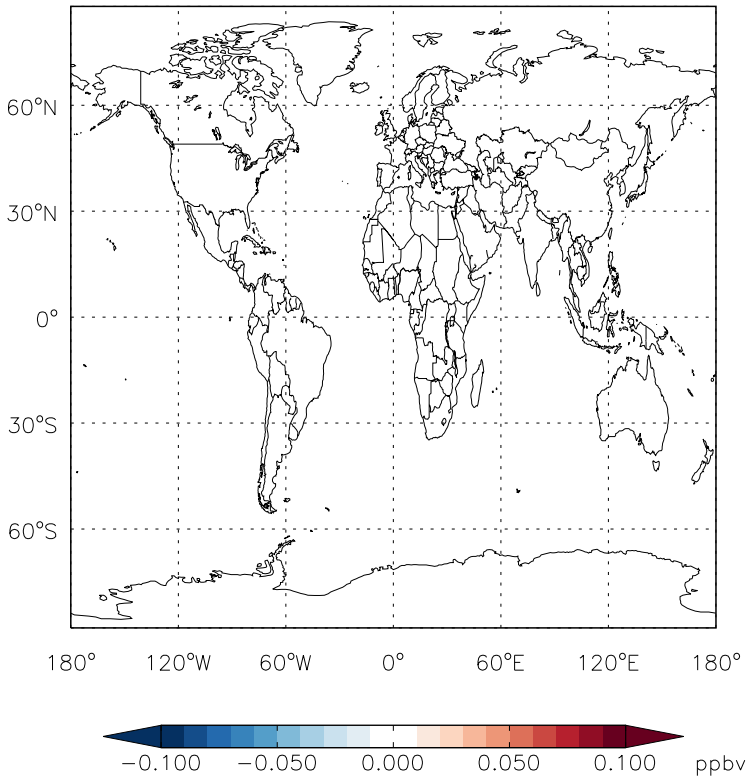
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CCl4 - Diff @ Surface for Jul



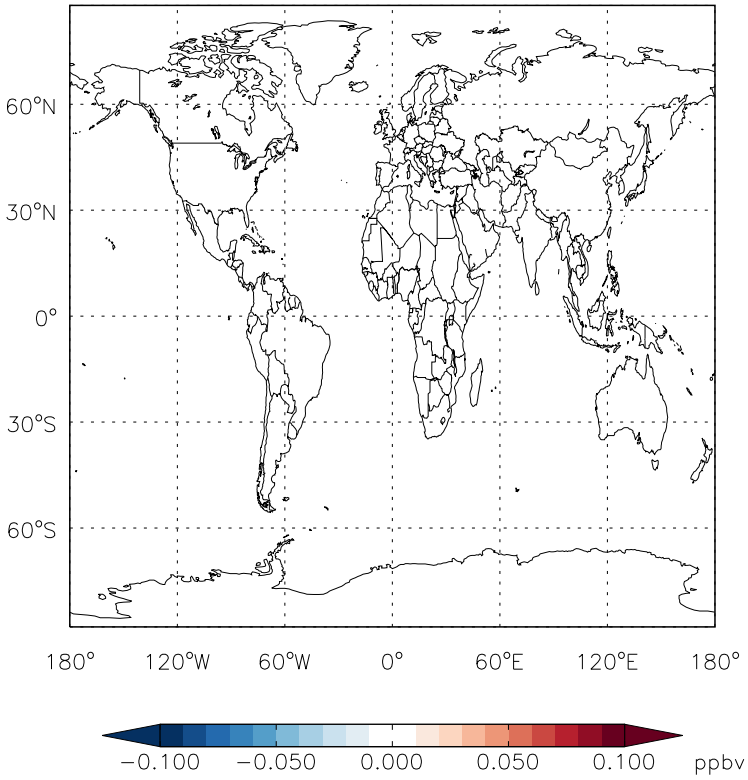
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CCl4- Diff @ 500 hPa for Jul



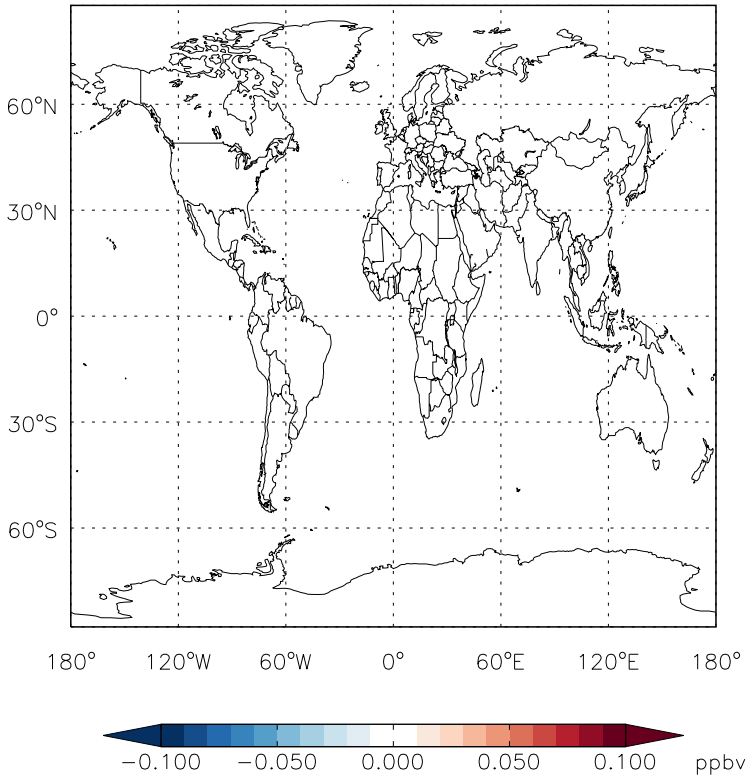
v11-01f-merra2-Run0 - v11-01d-Run1

CCl4 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

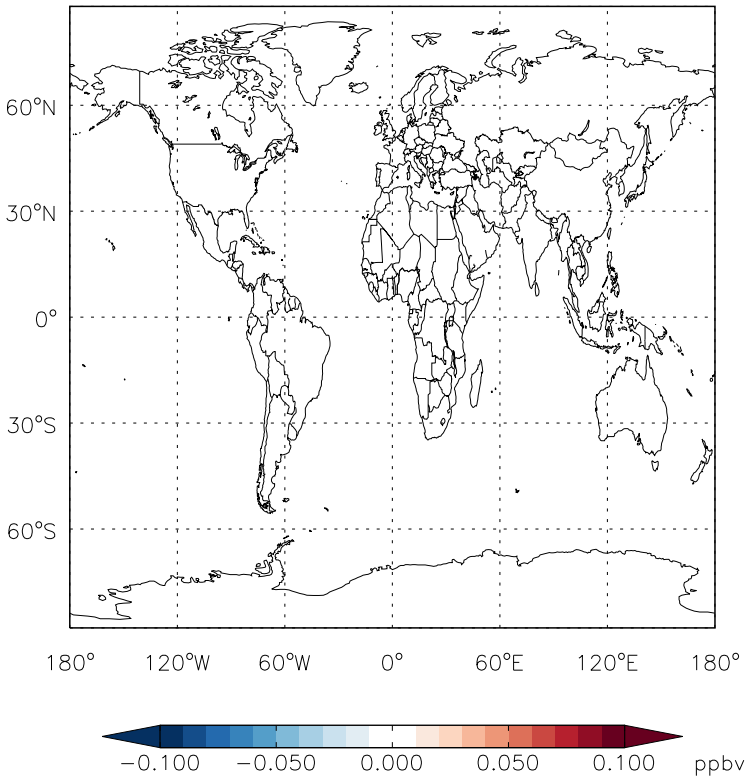
CCl4- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

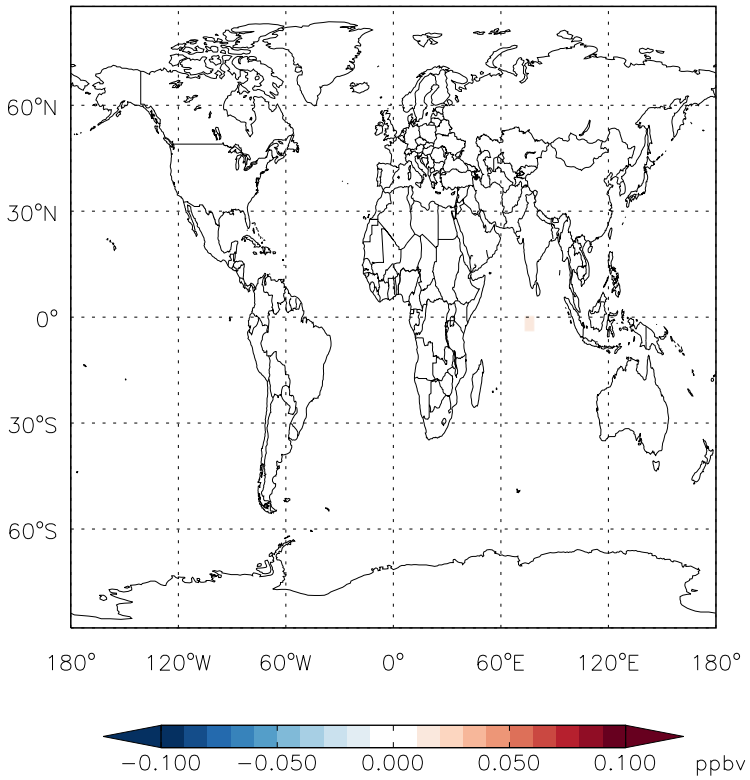
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CH3Cl - Diff @ Surface for Jul



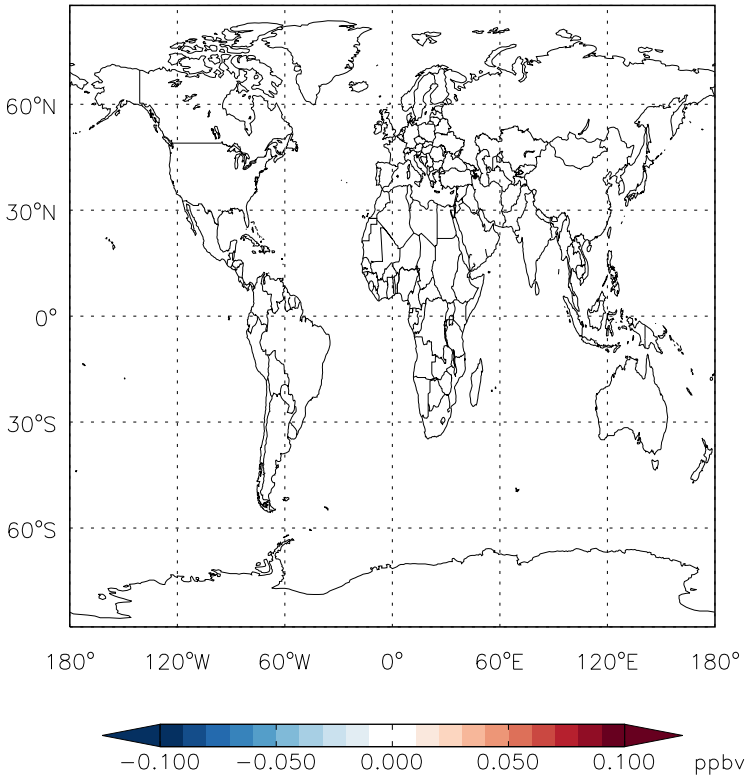
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CH3Cl- Diff @ 500 hPa for Jul



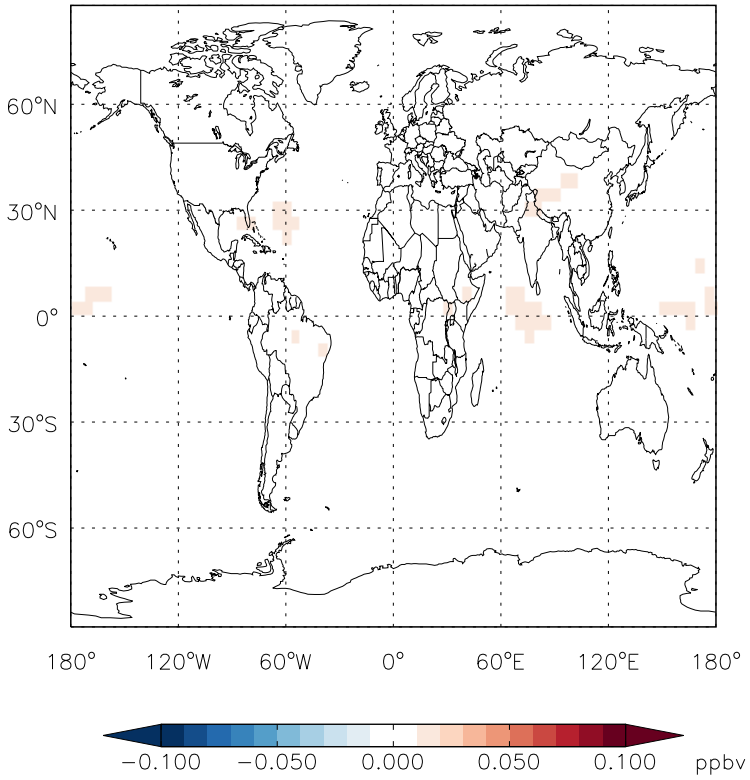
v11-01f-merra2-Run0 - v11-01d-Run1

CH3Cl - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

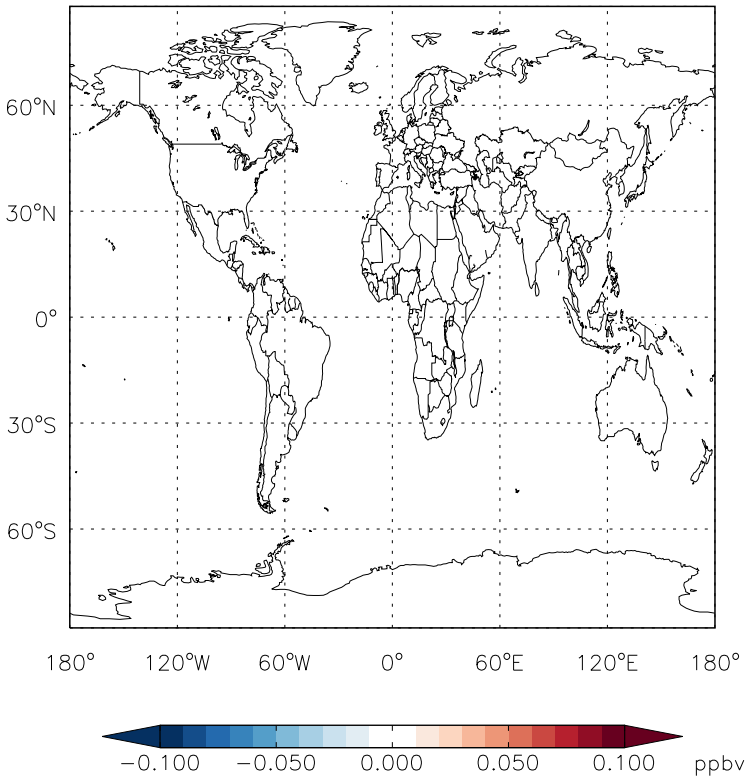
CH3Cl- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

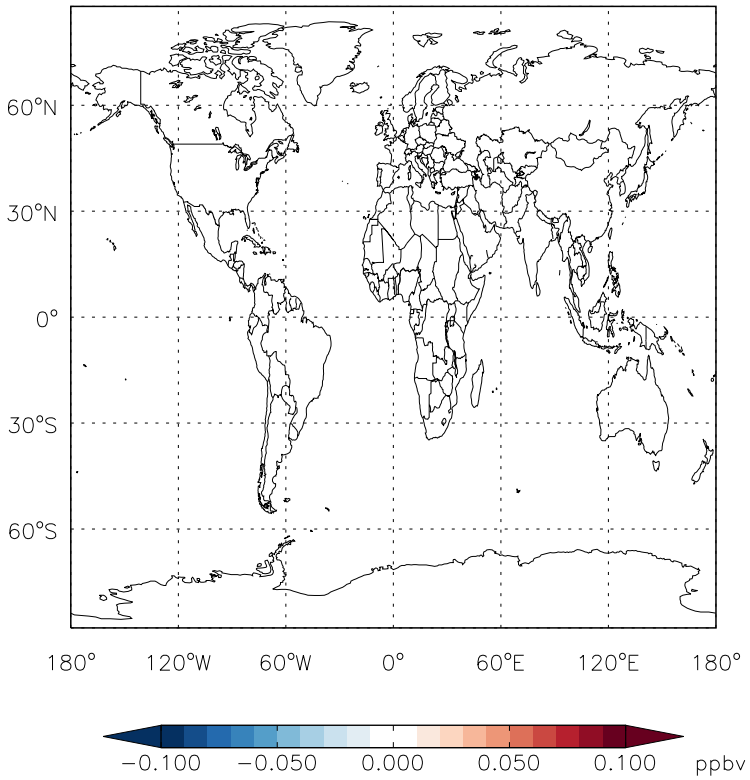
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH3CCl3 − Diff @ Surface for Jul



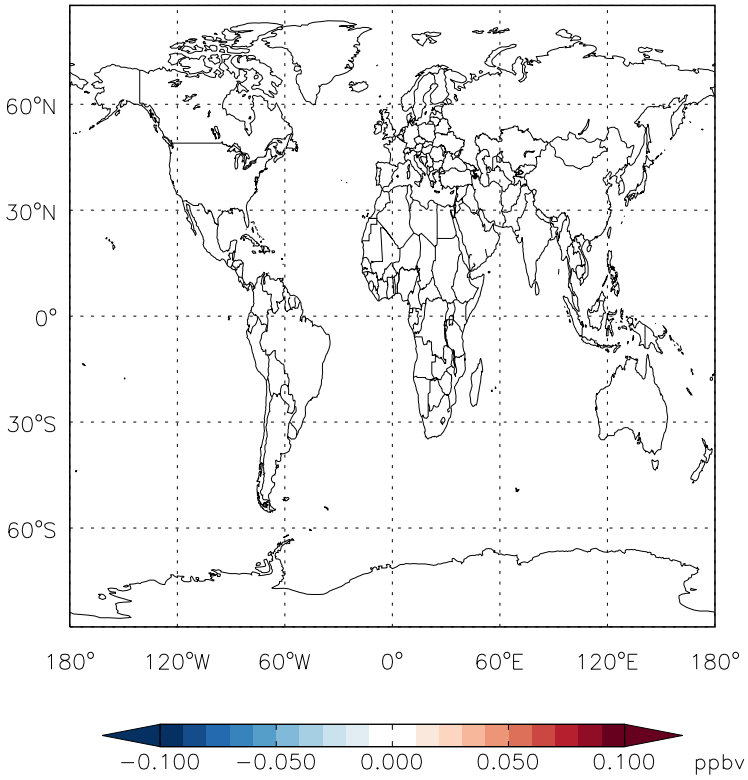
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

CH3CCl3− Diff @ 500 hPa for Jul



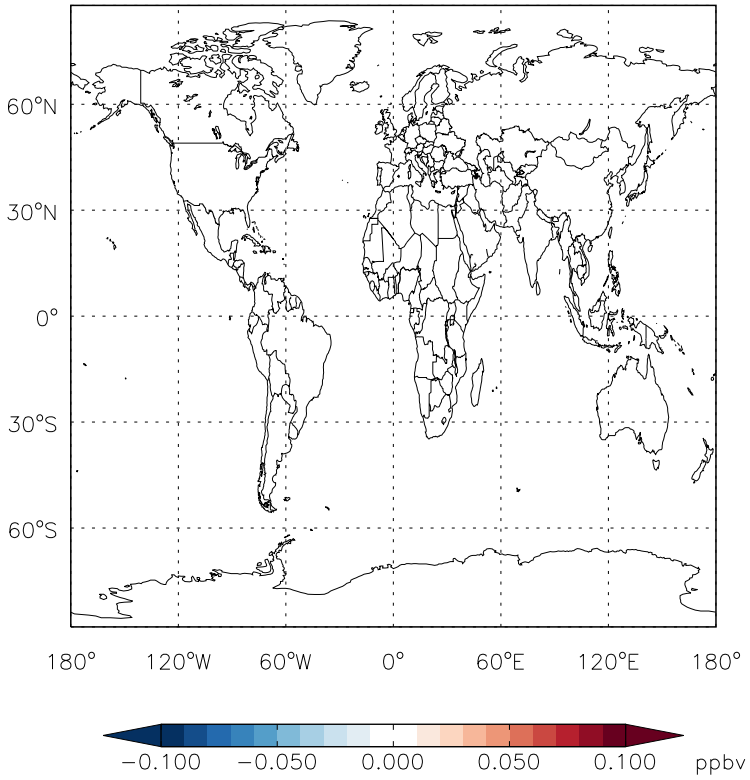
v11−01f−merra2−Run0 − v11−01d−Run1

CH3CCl3 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

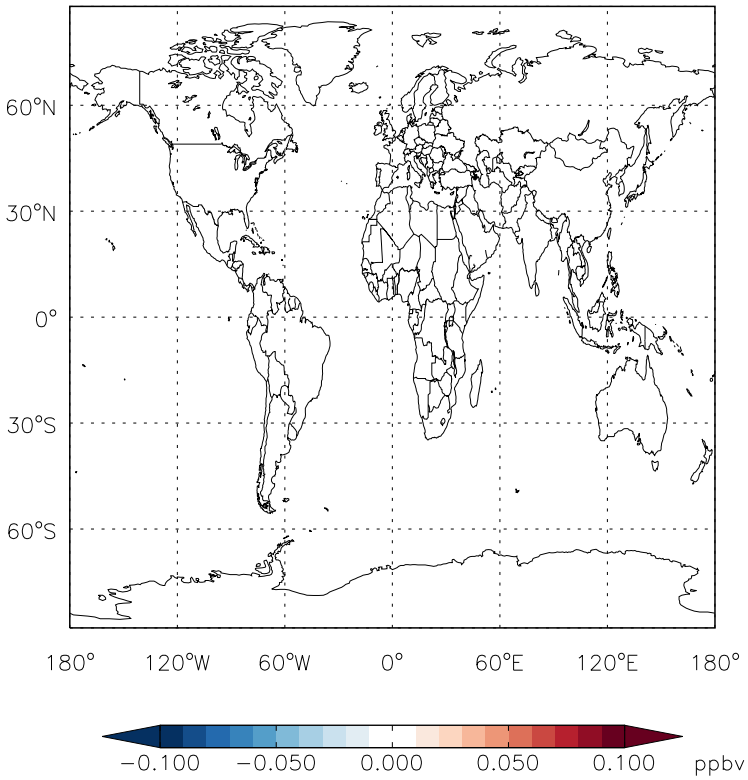
CH3CCl3− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

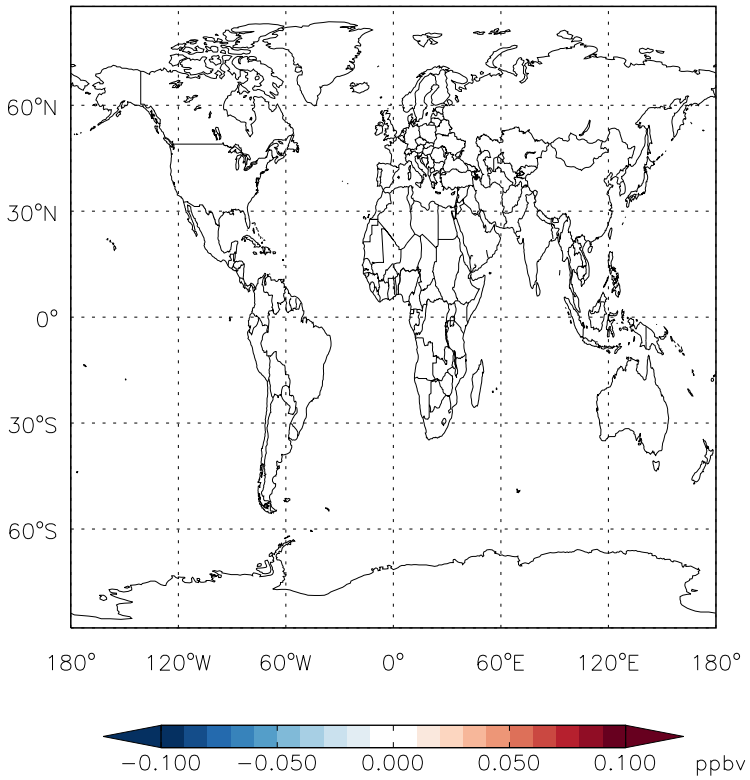
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CFCX - Diff @ Surface for Jul



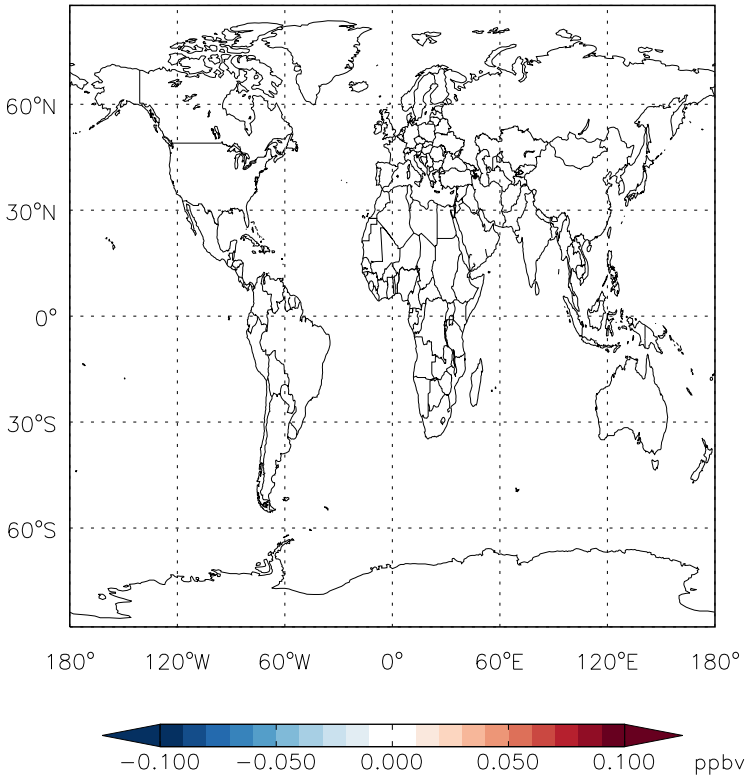
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CFCX- Diff @ 500 hPa for Jul



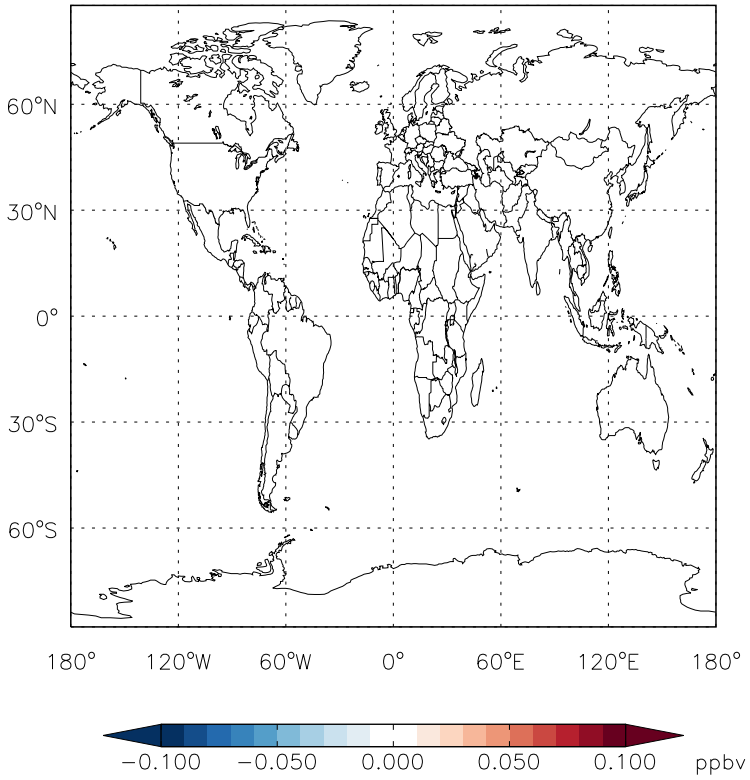
v11-01f-merra2-Run0 - v11-01d-Run1

CFCX - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

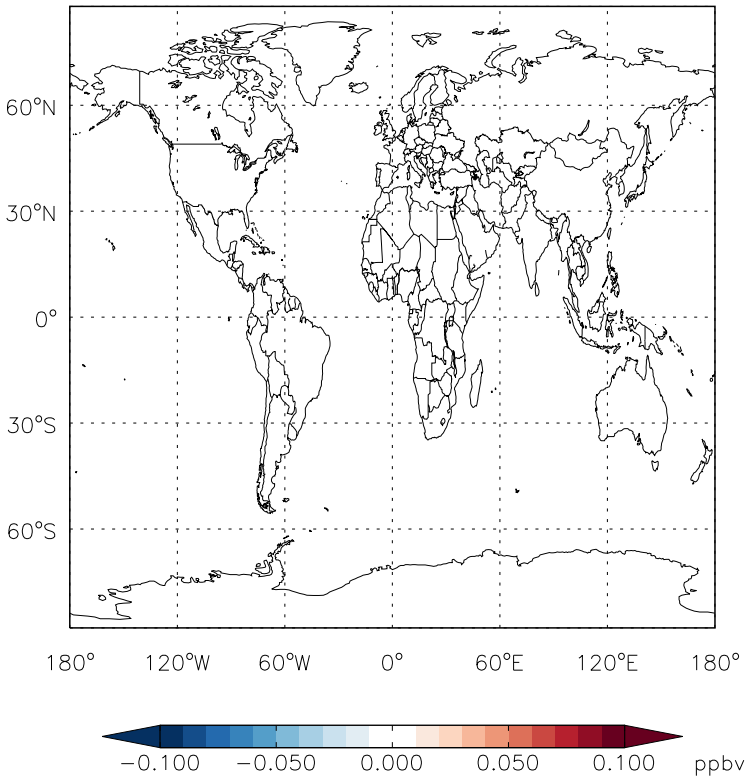
CFCX- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

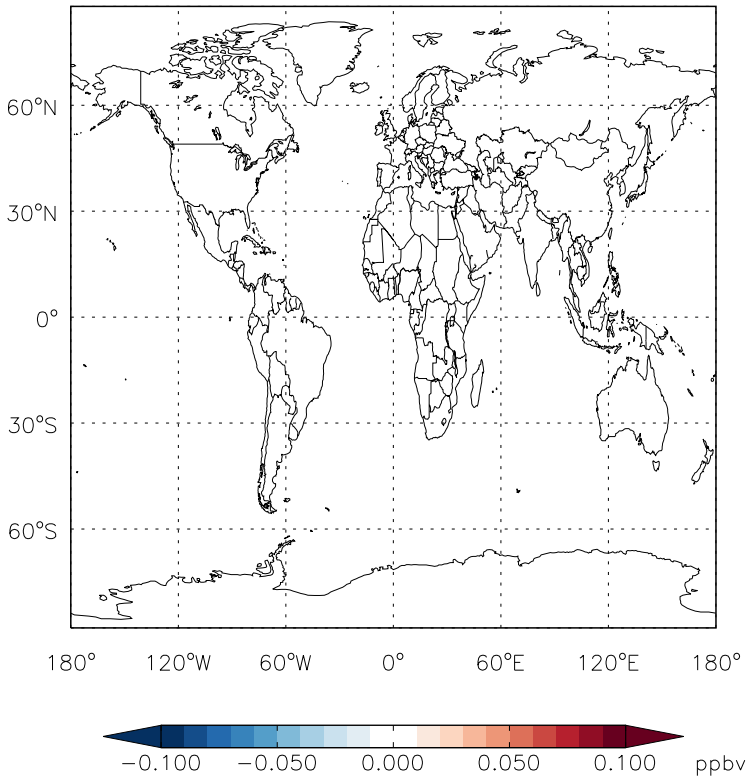
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

HCFCX − Diff @ Surface for Jul



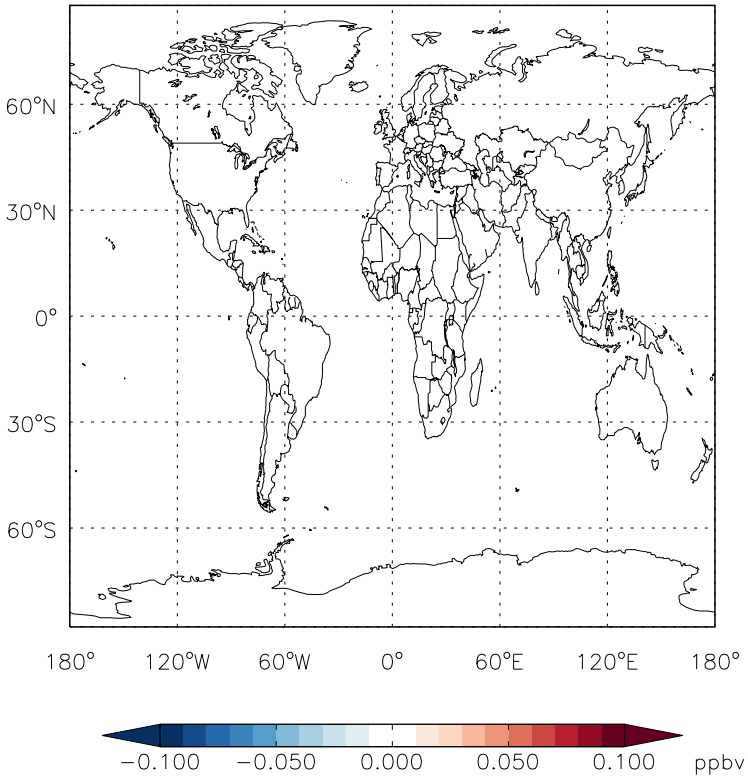
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

HCFCX− Diff @ 500 hPa for Jul



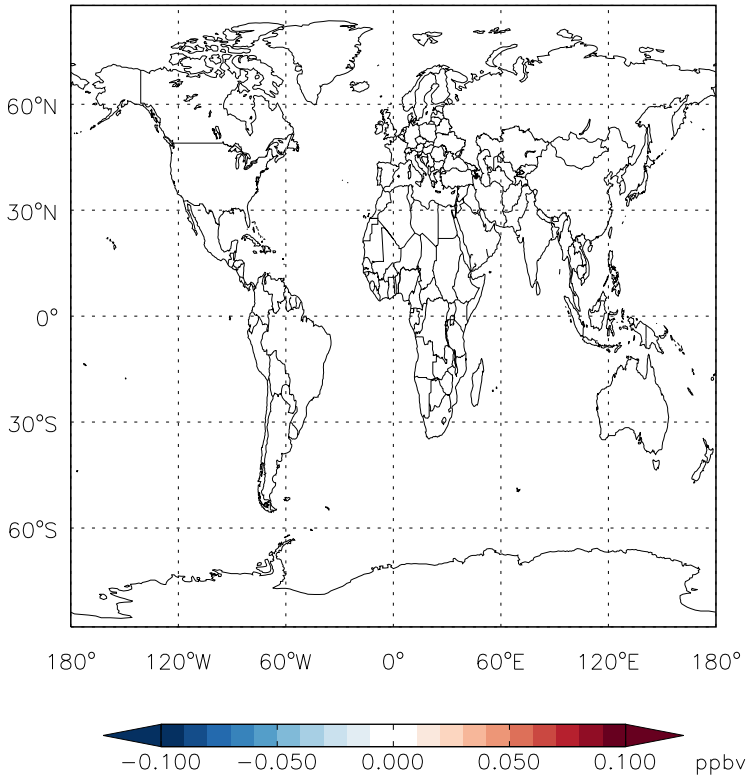
v11−01f−merra2−Run0 − v11−01d−Run1

HCFCX − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

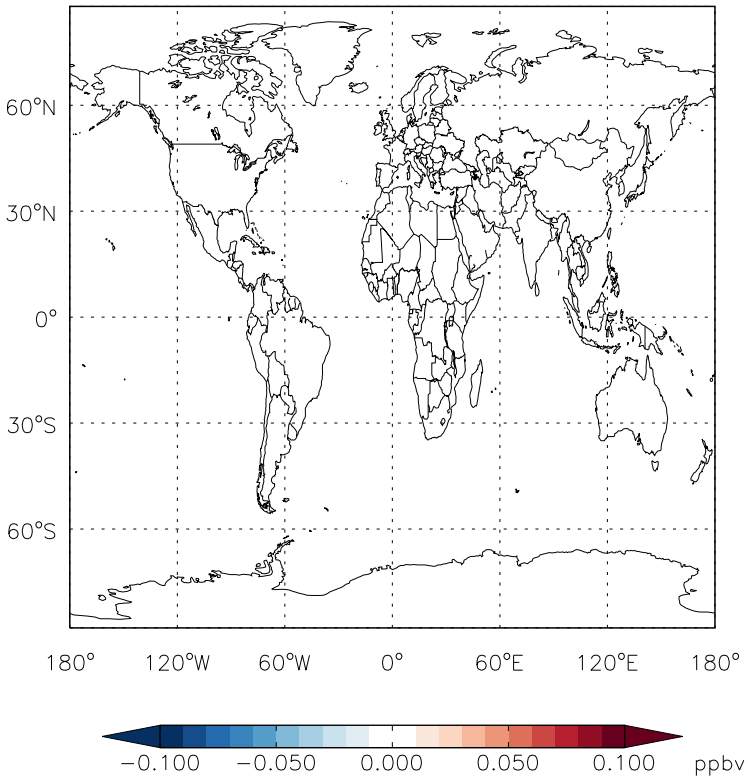
HCFCX− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

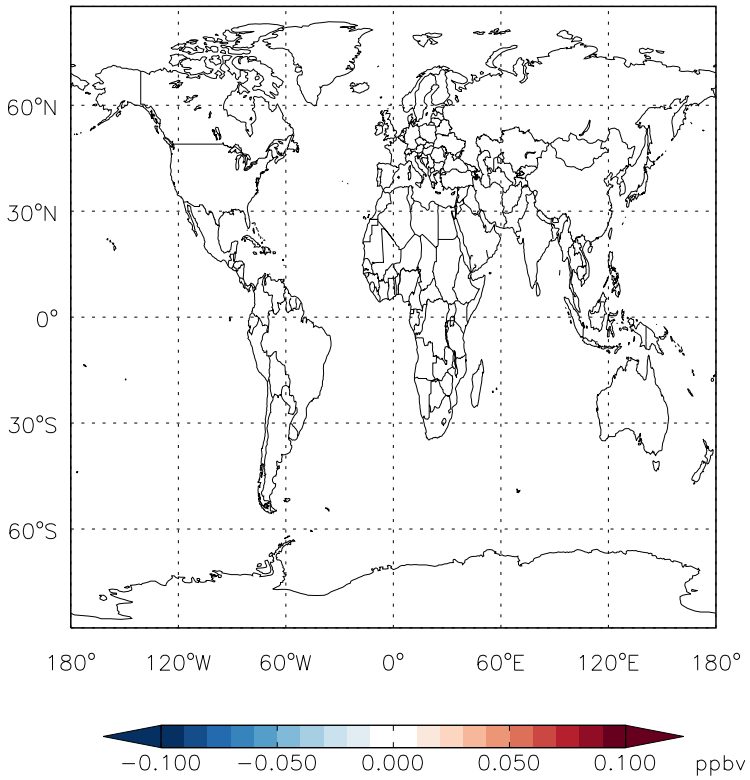
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CFC11 - Diff @ Surface for Jul



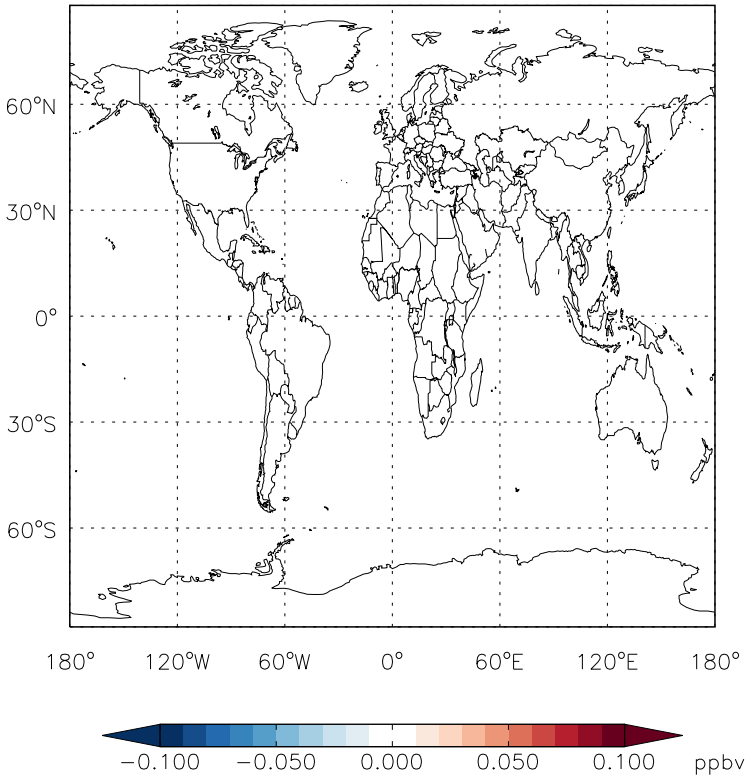
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CFC11- Diff @ 500 hPa for Jul



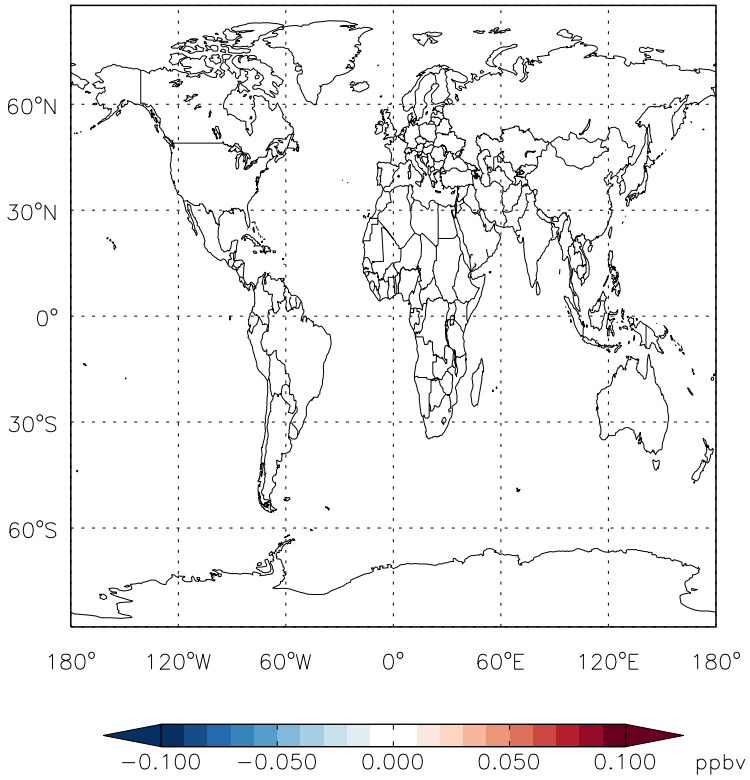
v11-01f-merra2-Run0 - v11-01d-Run1

CFC11 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

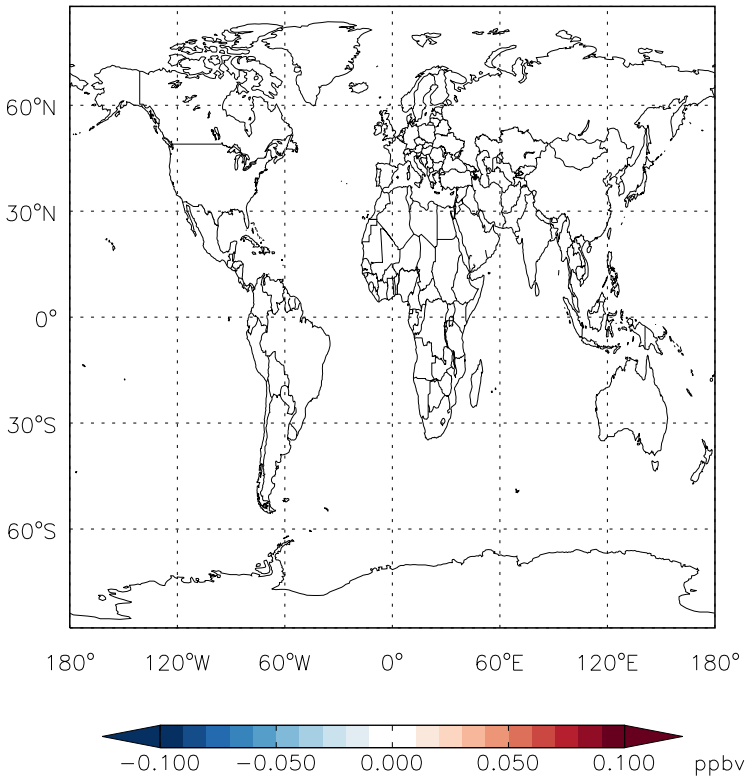
CFC11- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

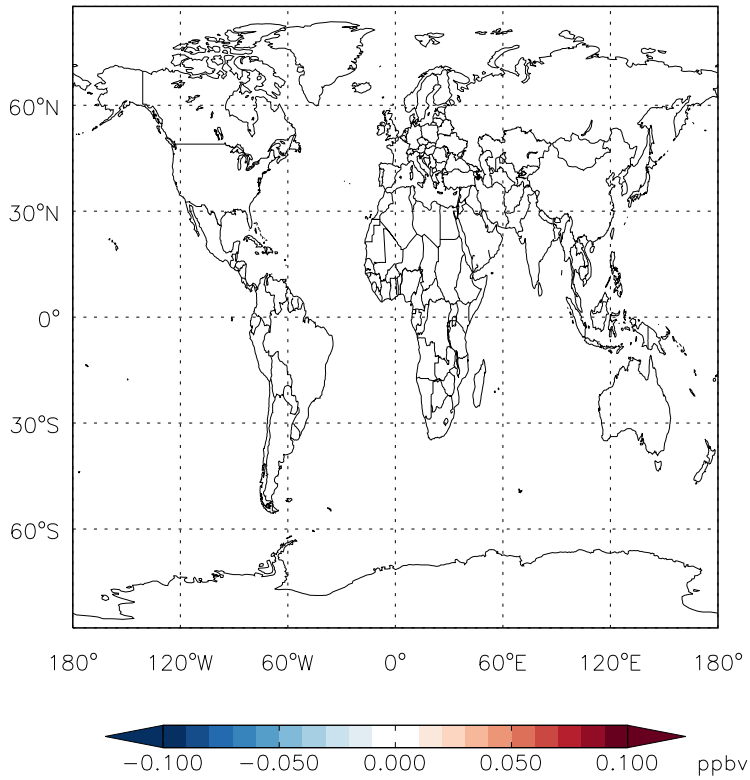
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CFC12 - Diff @ Surface for Jul



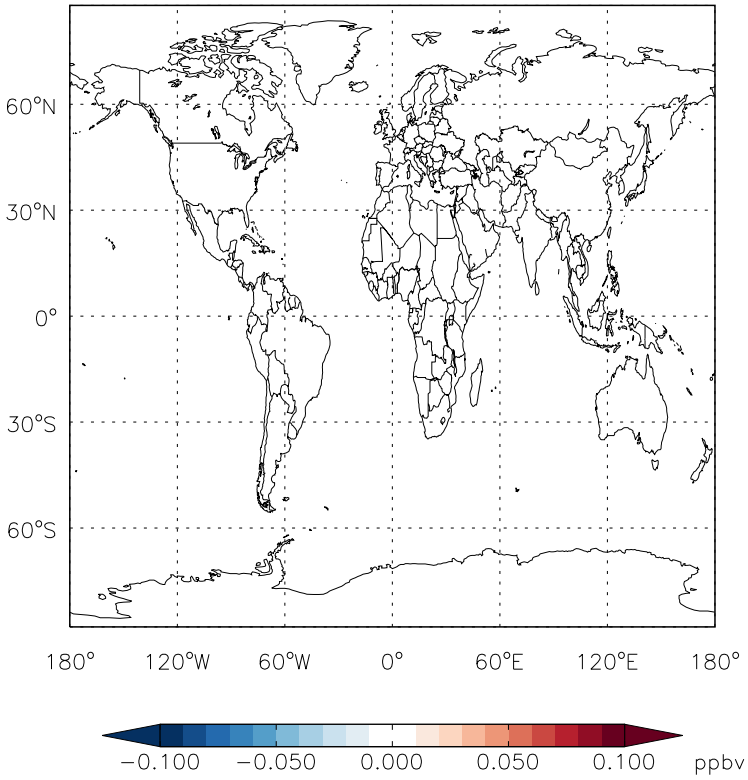
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CFC12- Diff @ 500 hPa for Jul



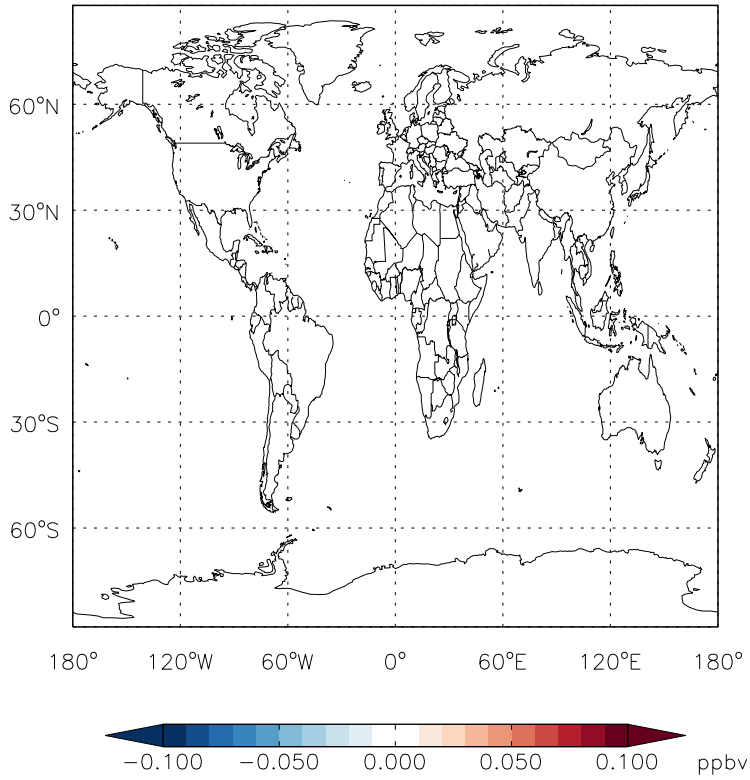
v11-01f-merra2-Run0 - v11-01d-Run1

CFC12 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

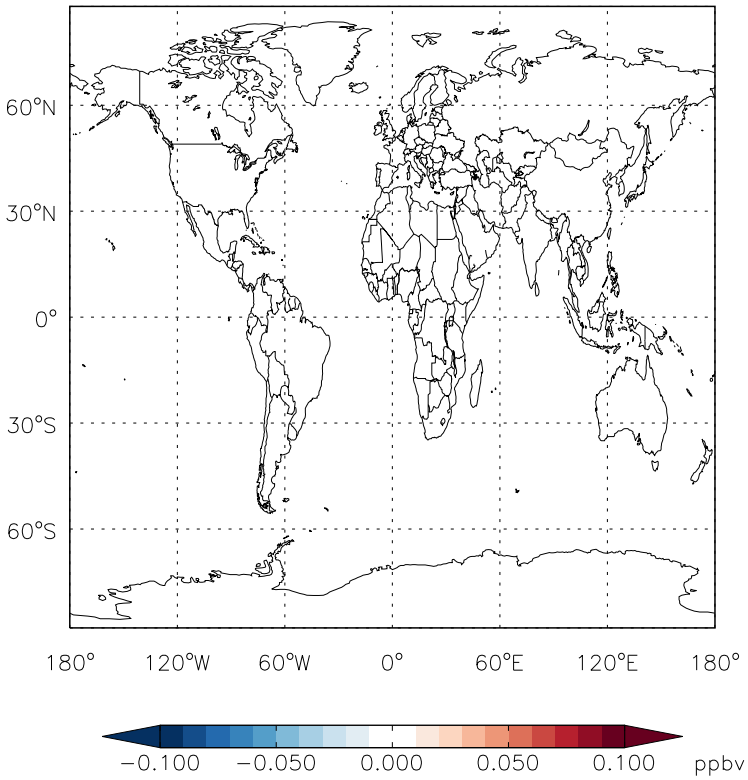
CFC12- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

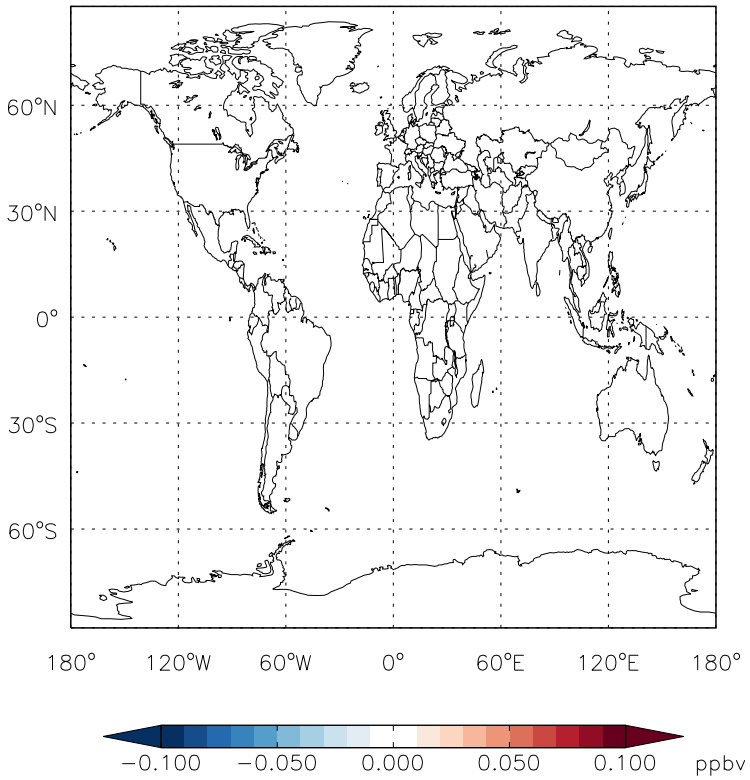
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HCFC22 - Diff @ Surface for Jul



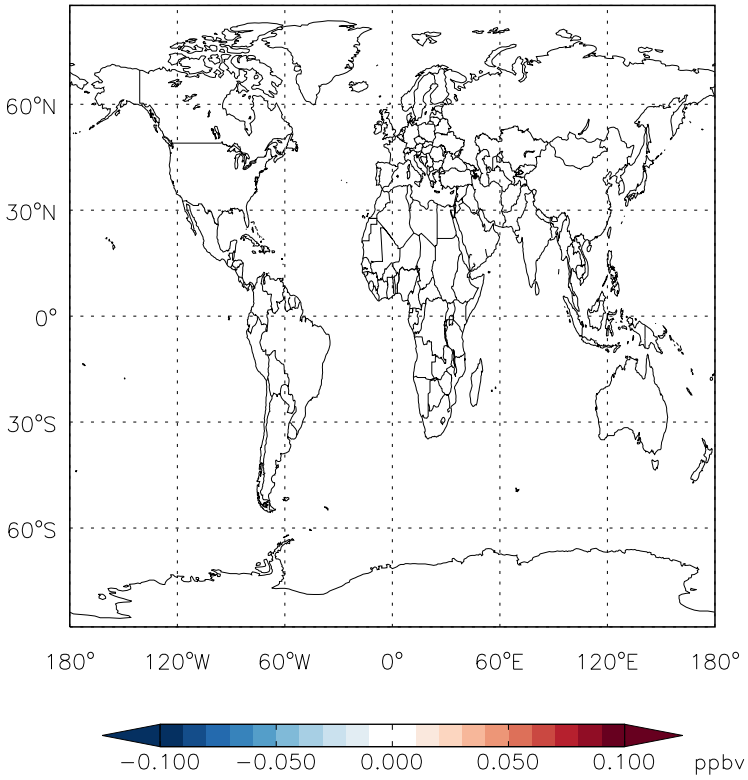
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HCFC22- Diff @ 500 hPa for Jul



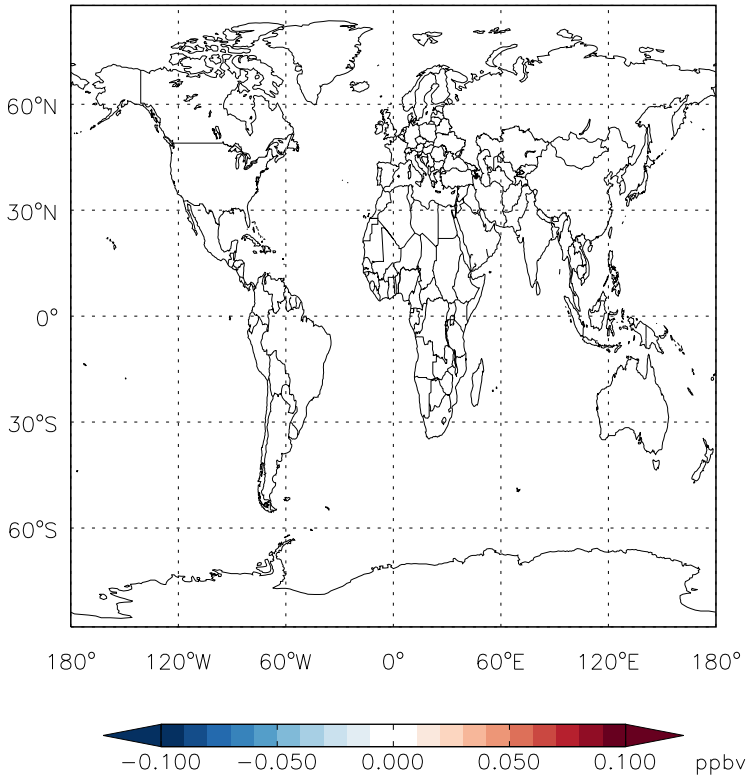
v11-01f-merra2-Run0 - v11-01d-Run1

HCFC22 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

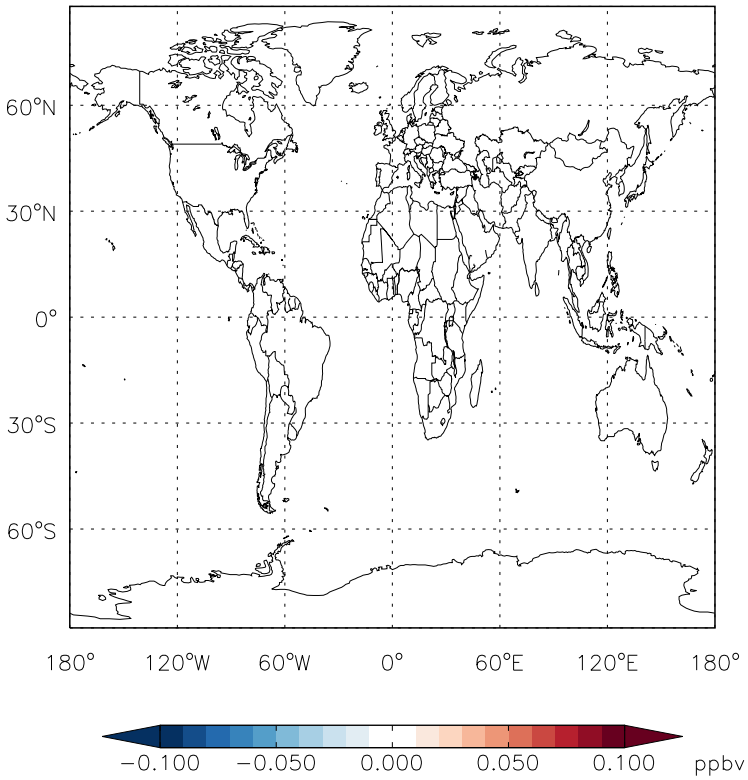
HCFC22- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

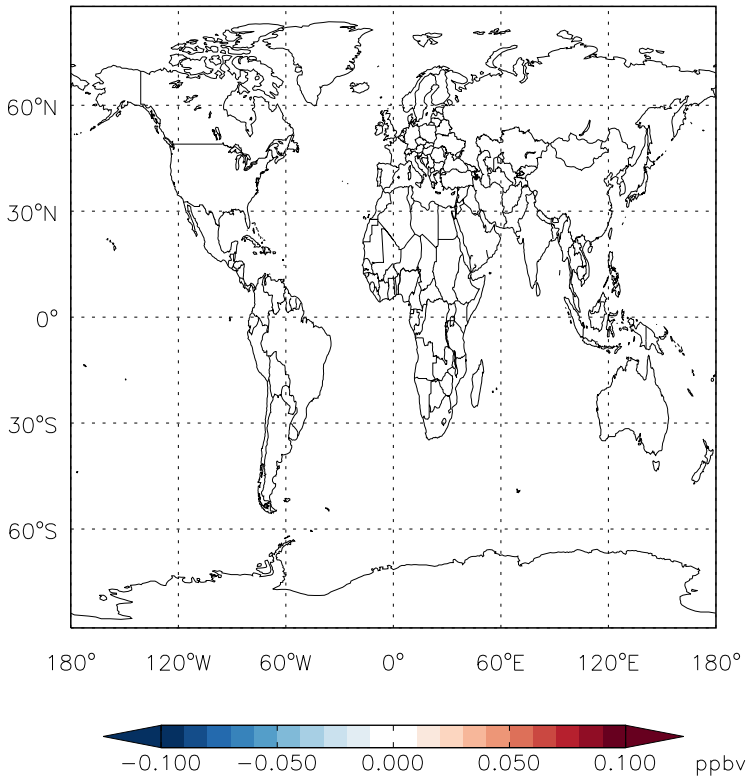
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H1211 - Diff @ Surface for Jul



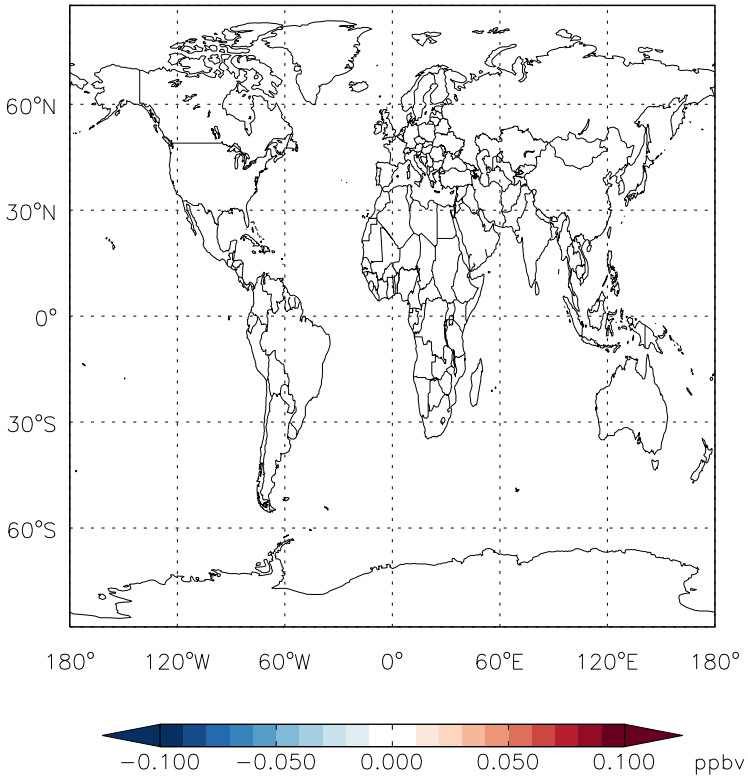
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H1211- Diff @ 500 hPa for Jul



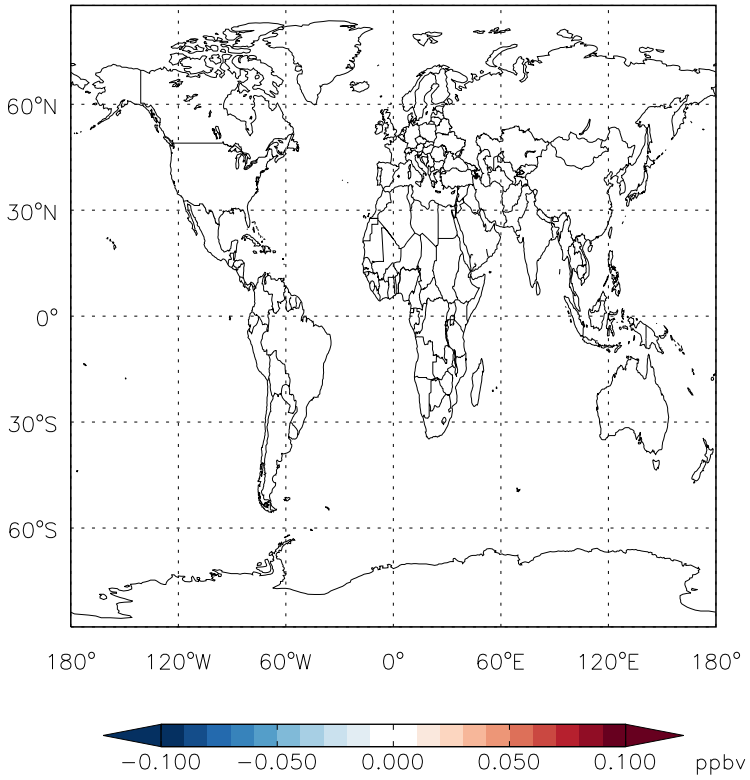
v11-01f-merra2-Run0 - v11-01d-Run1

H1211 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

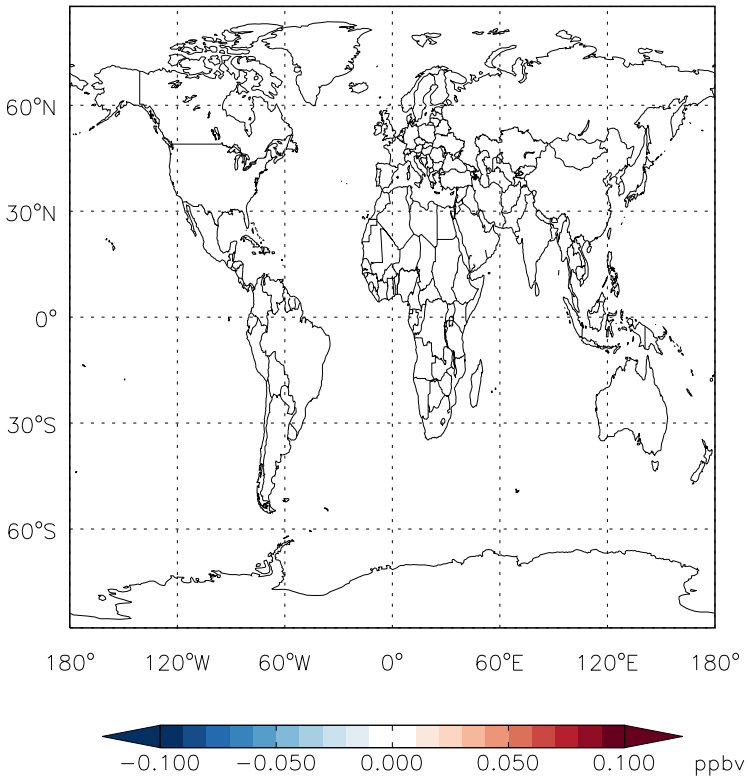
H1211- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

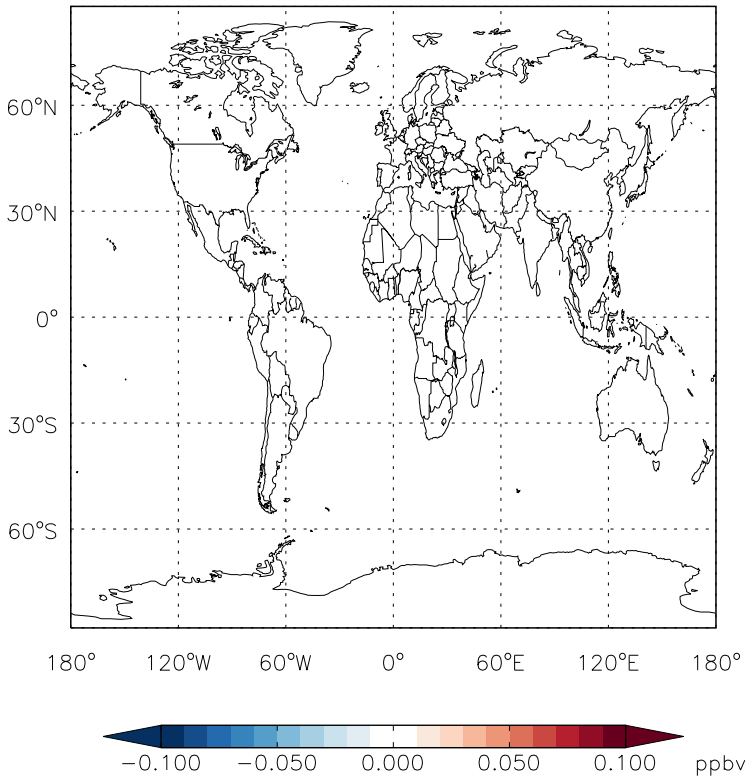
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H1301 - Diff @ Surface for Jul



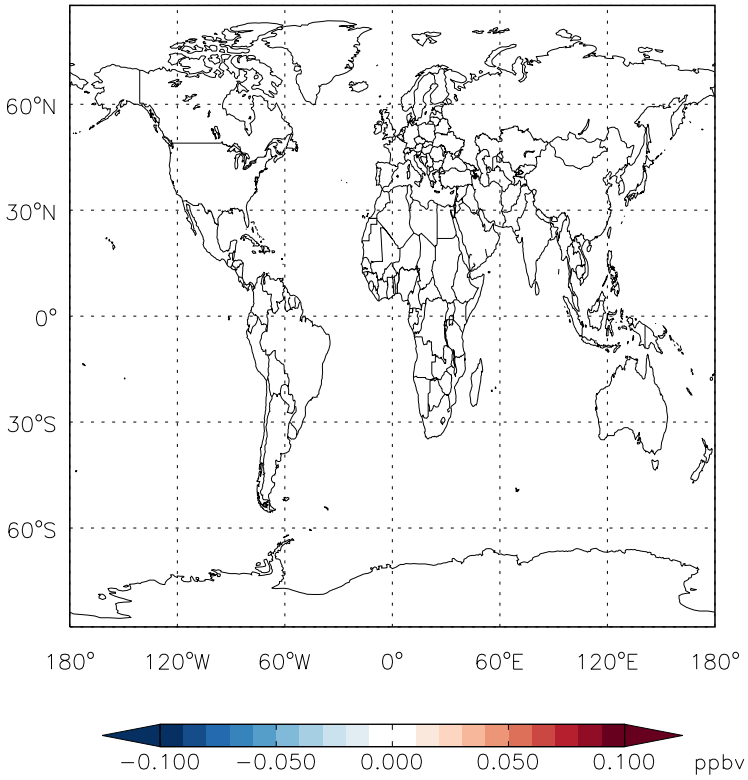
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H1301- Diff @ 500 hPa for Jul



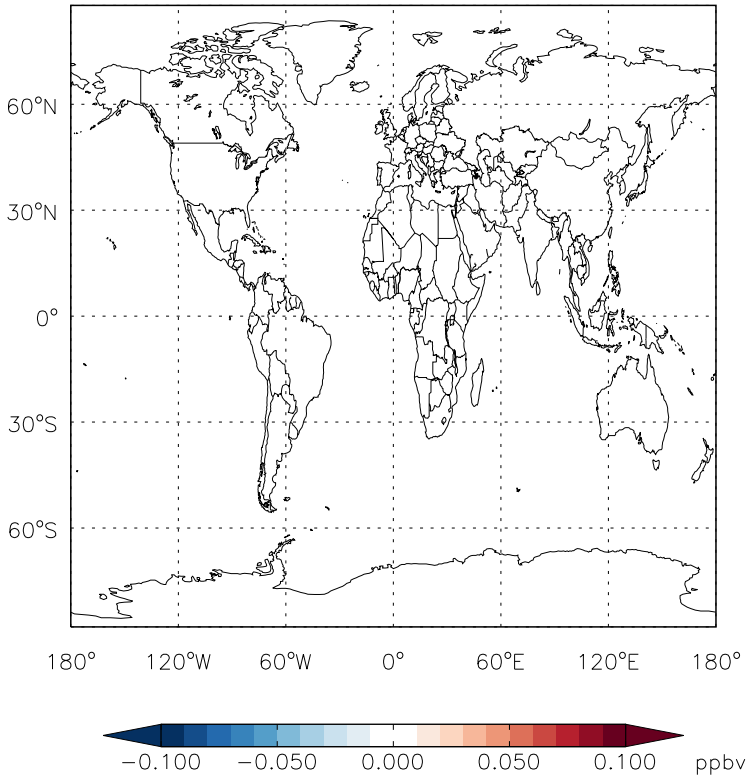
v11-01f-merra2-Run0 - v11-01d-Run1

H1301 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

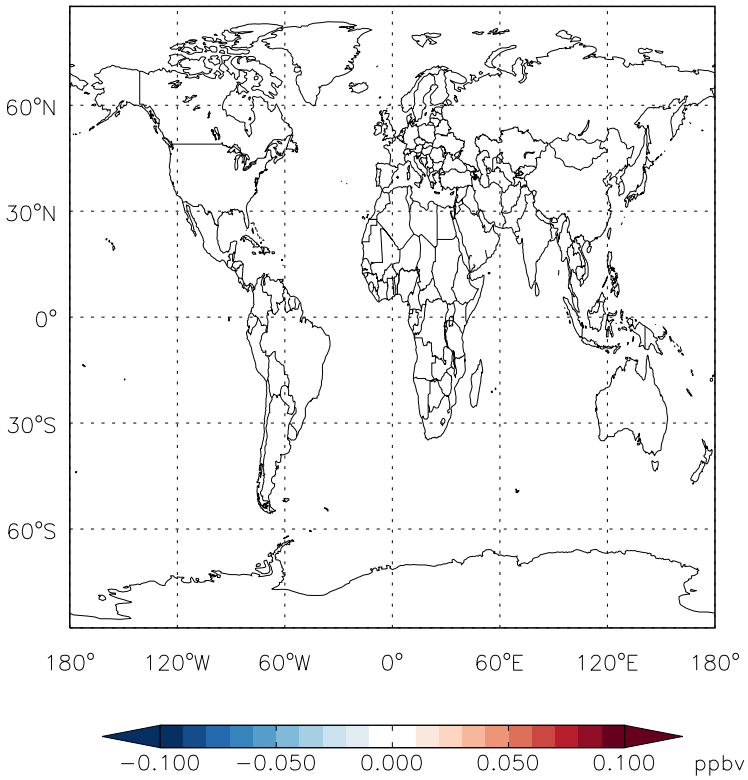
H1301- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

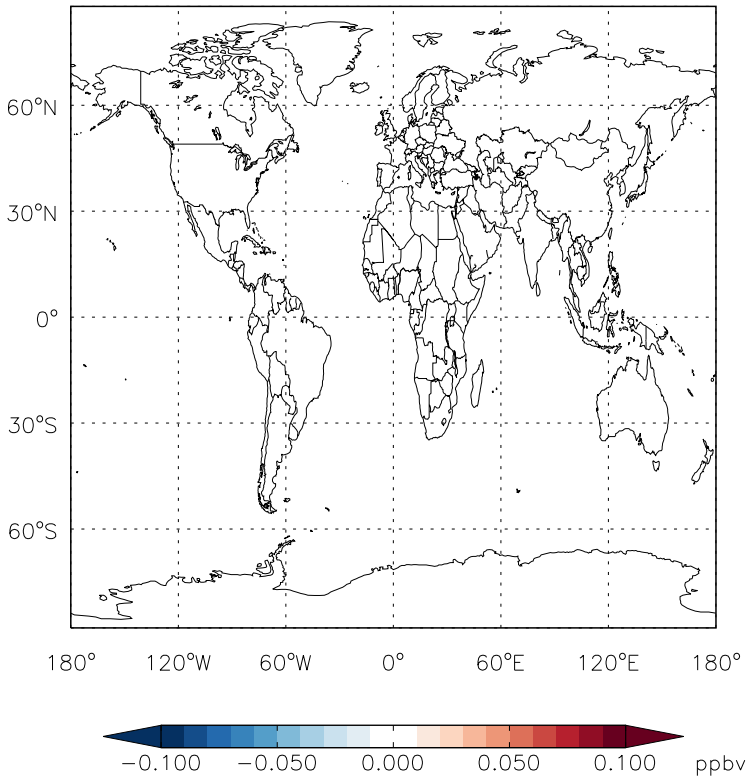
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H2402 - Diff @ Surface for Jul



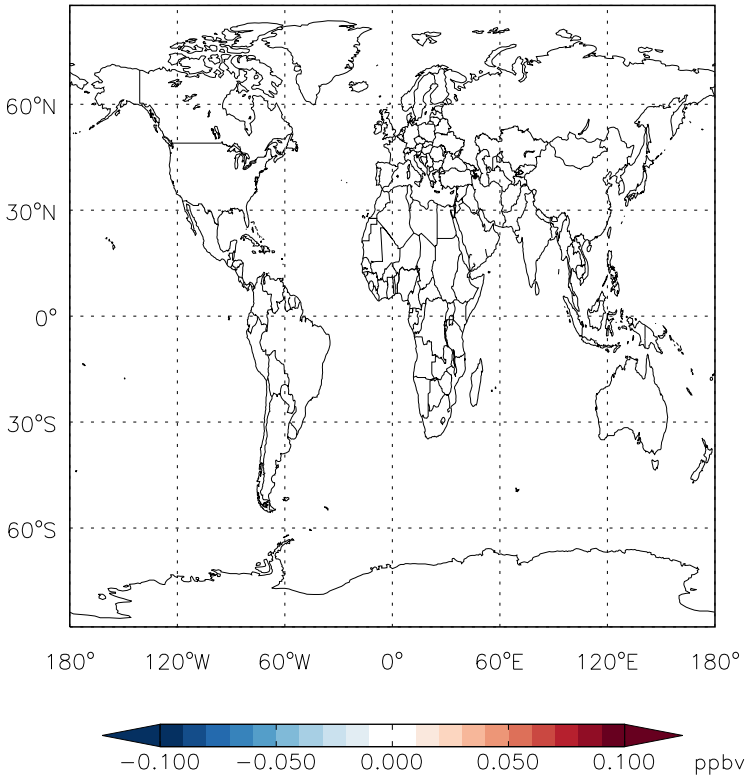
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H2402- Diff @ 500 hPa for Jul



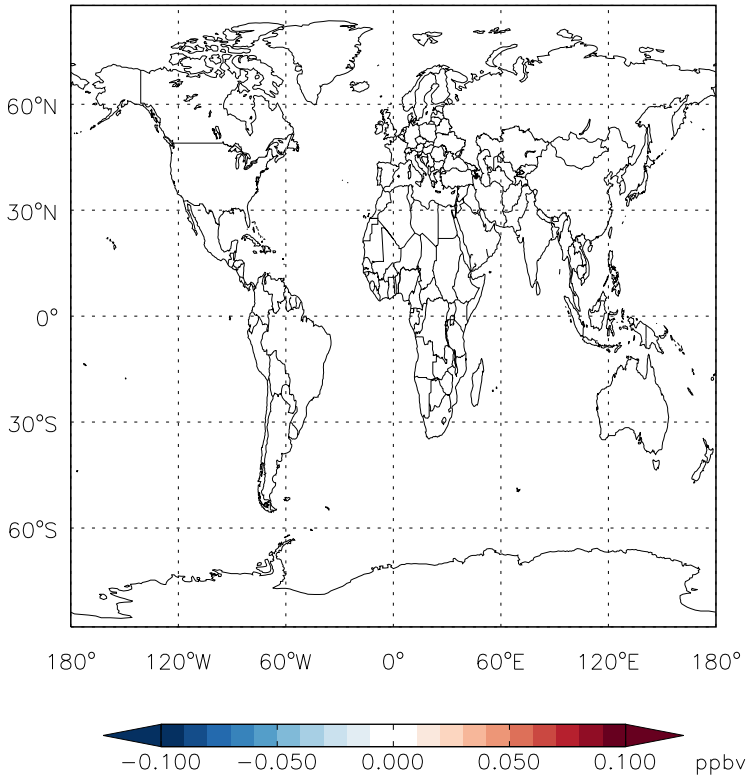
v11-01f-merra2-Run0 - v11-01d-Run1

H2402 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

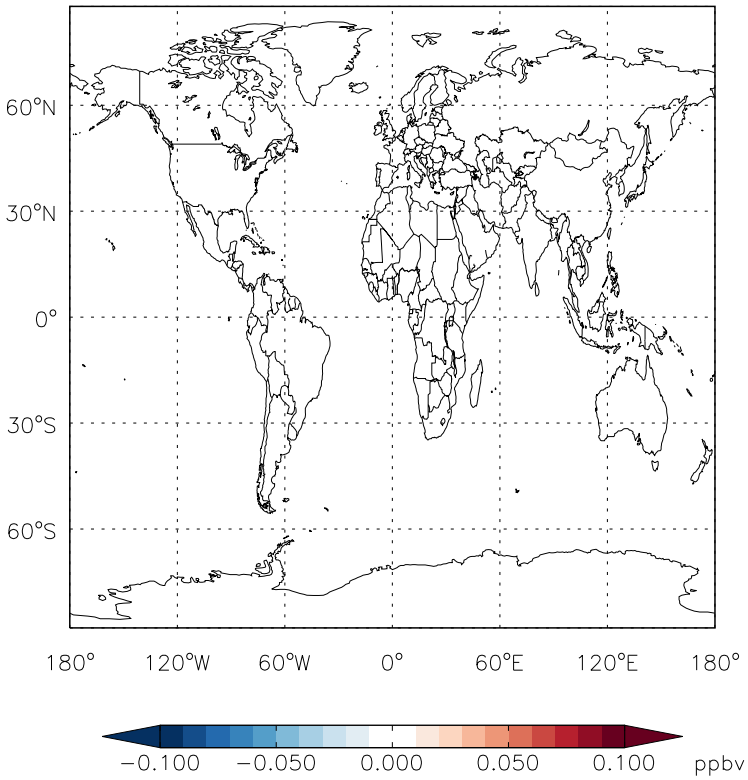
H2402- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

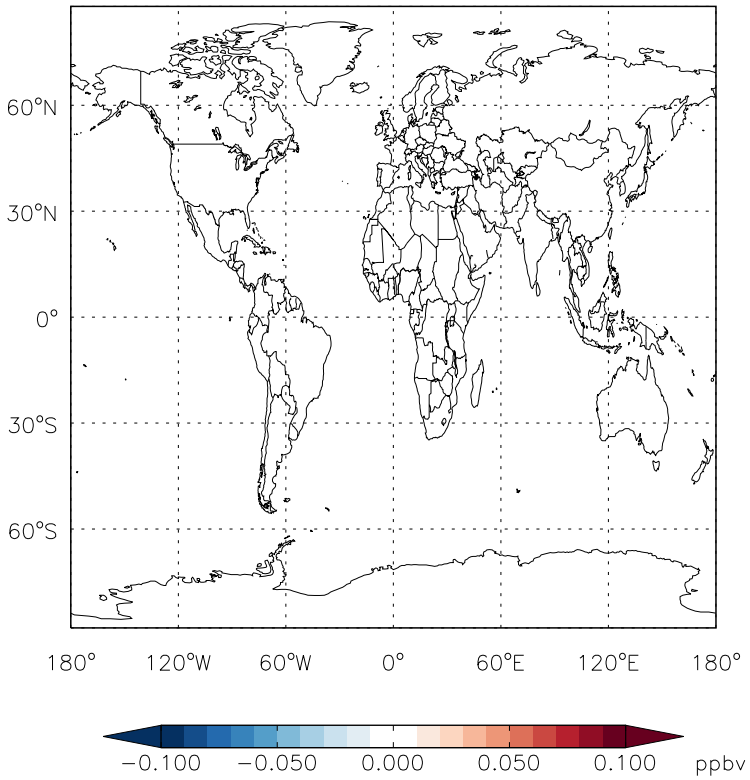
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CI - Diff @ Surface for Jul



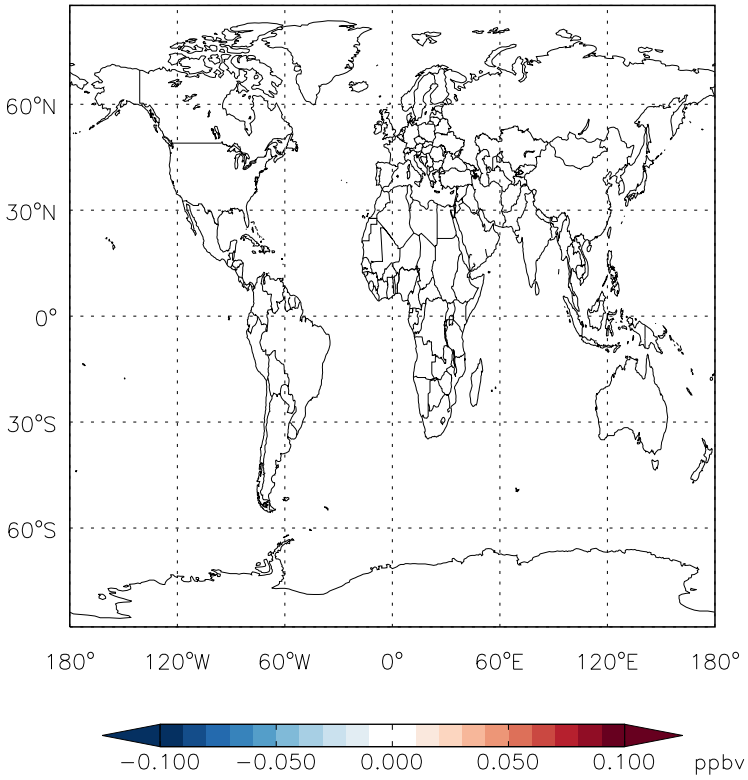
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

CI- Diff @ 500 hPa for Jul



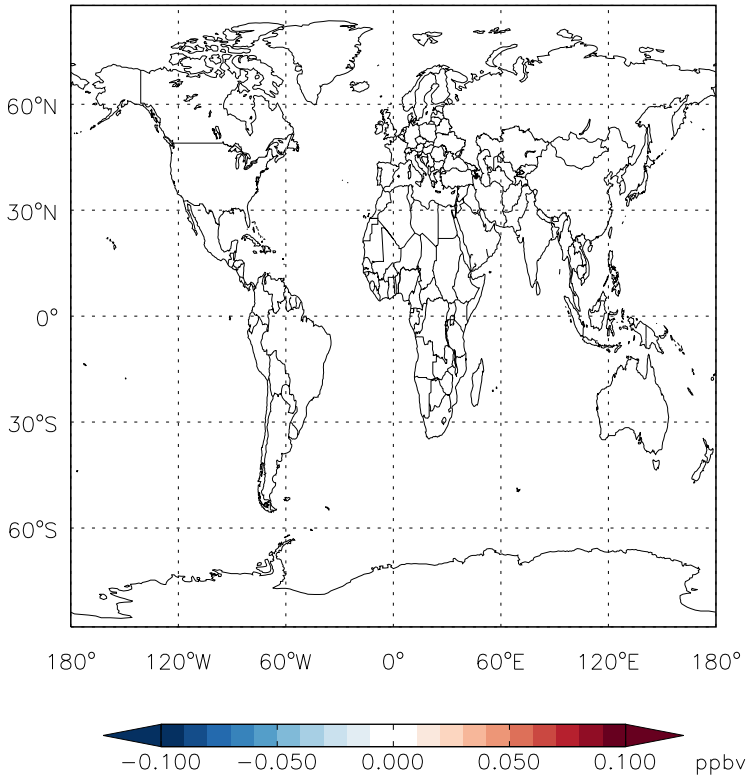
v11-01f-merra2-Run0 - v11-01d-Run1

CI - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

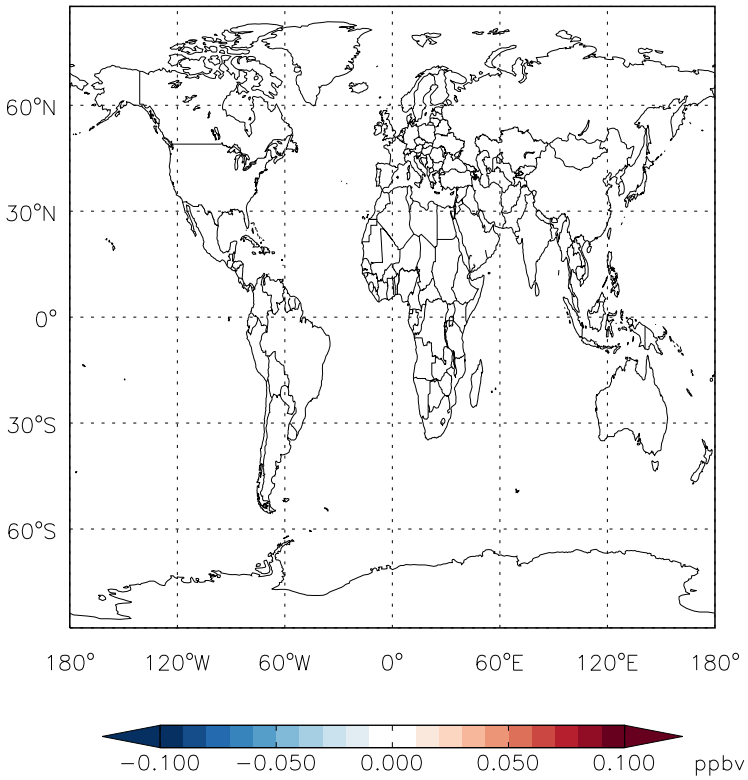
CI- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

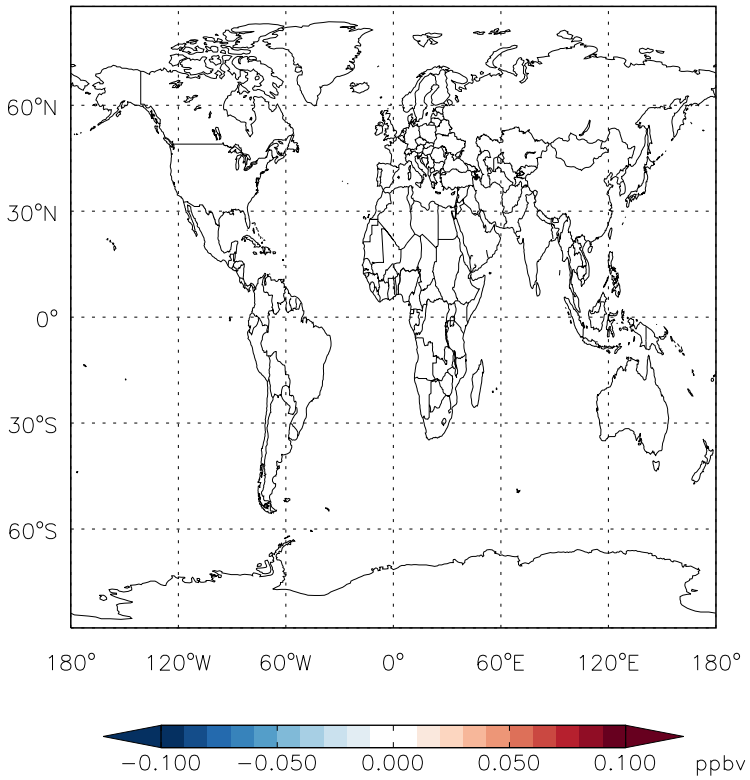
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClO - Diff @ Surface for Jul



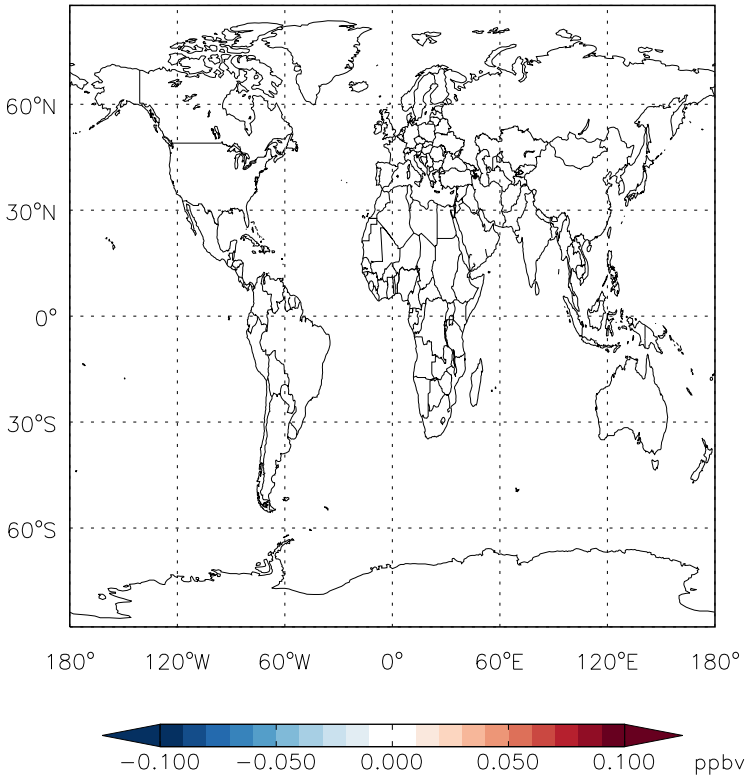
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClO- Diff @ 500 hPa for Jul



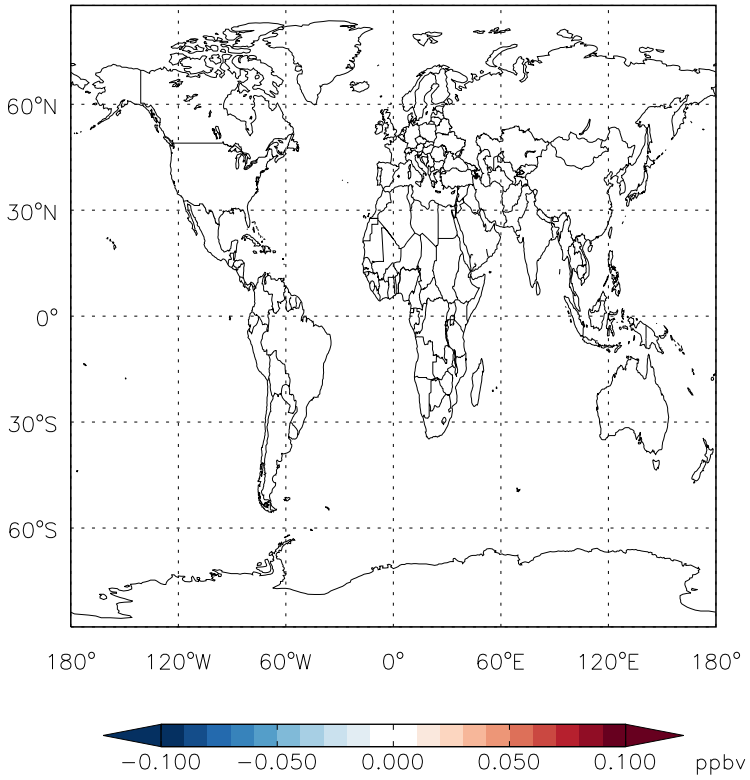
v11-01f-merra2-Run0 - v11-01d-Run1

ClO - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

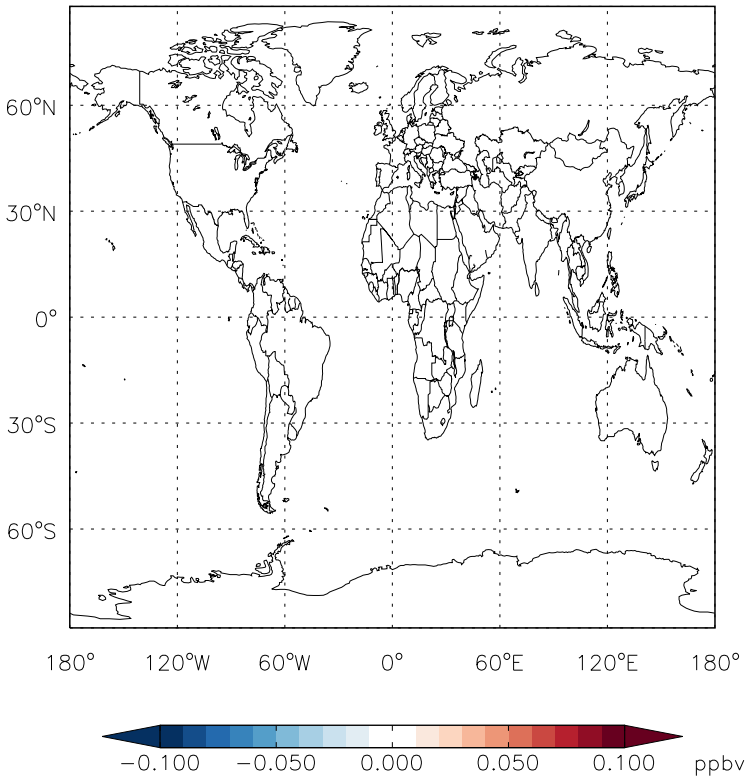
ClO- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

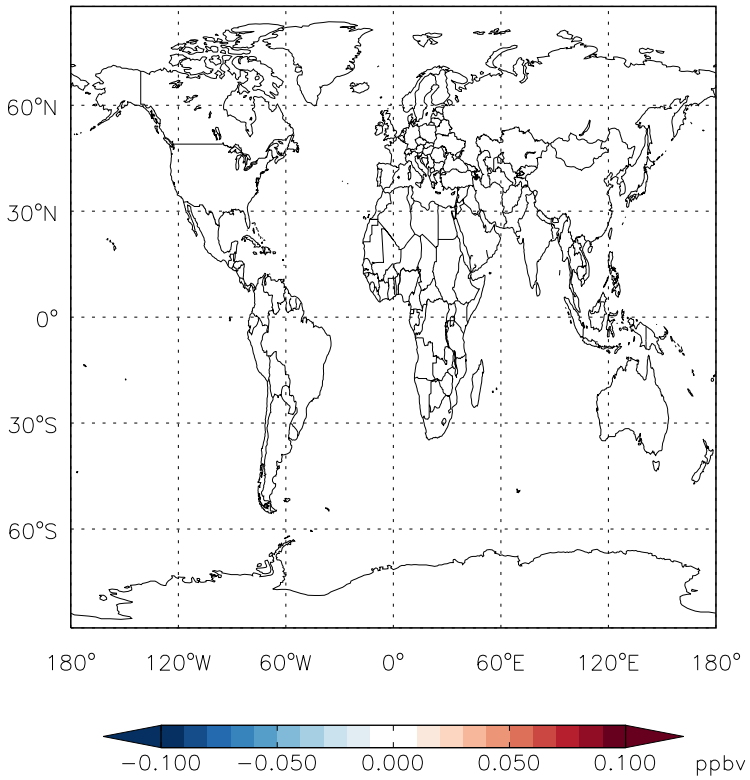
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HOCl - Diff @ Surface for Jul



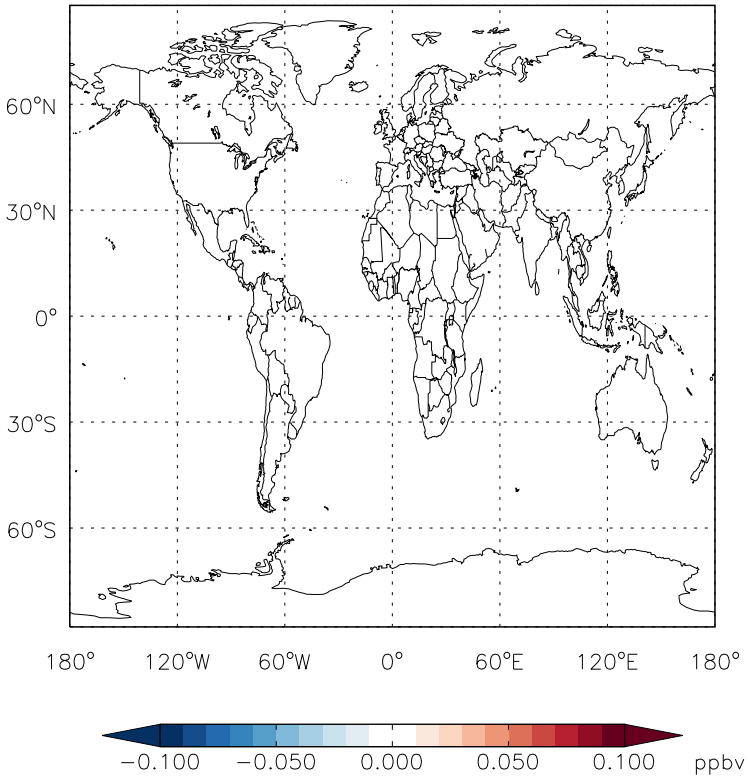
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

HOCl- Diff @ 500 hPa for Jul



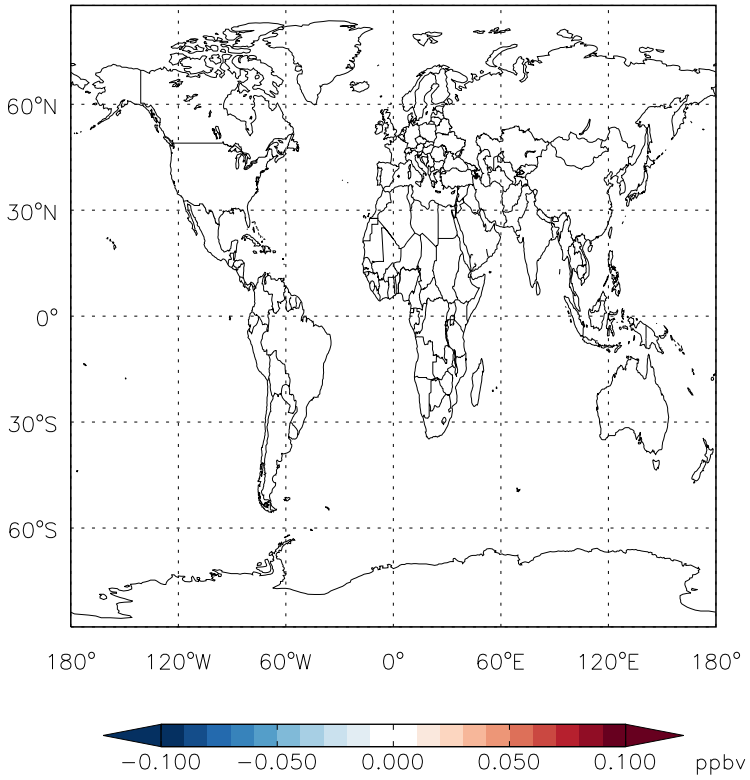
v11-01f-merra2-Run0 - v11-01d-Run1

HOCl - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

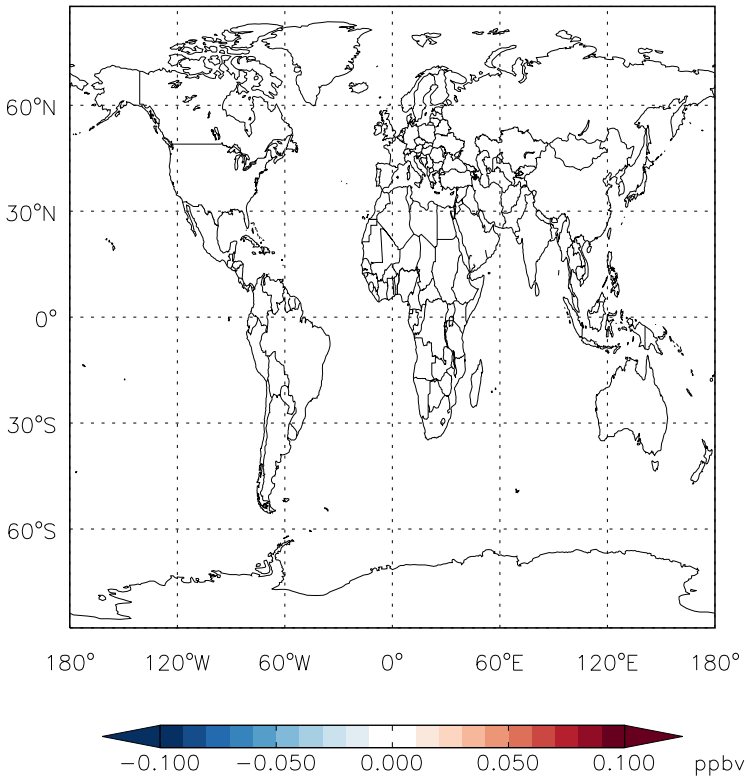
HOCl- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

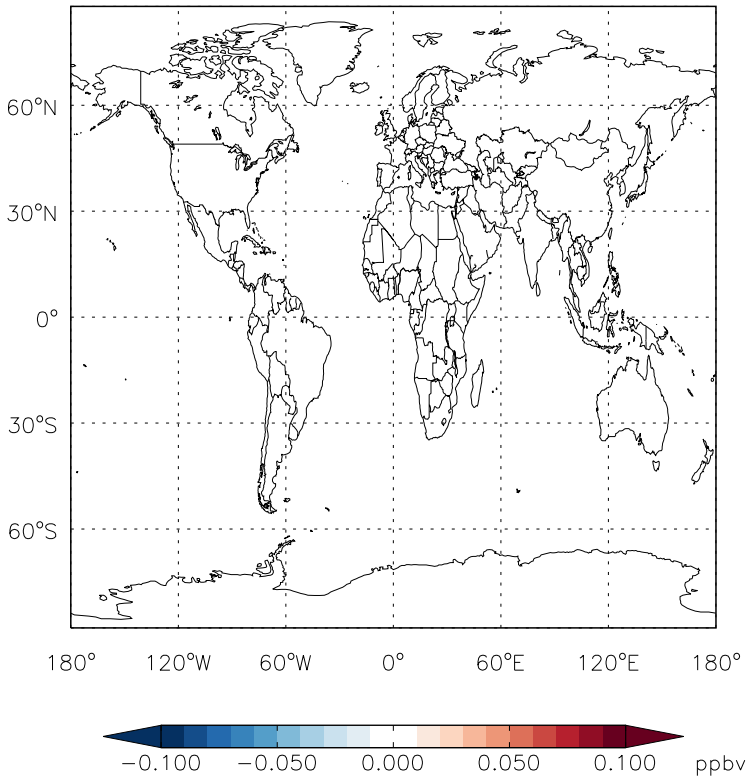
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClNO3 - Diff @ Surface for Jul



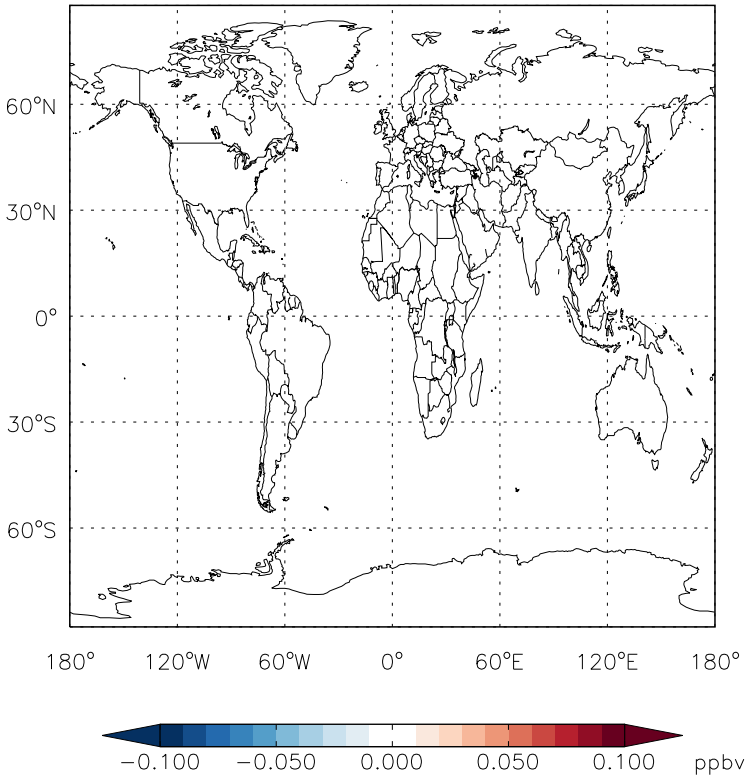
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClNO3- Diff @ 500 hPa for Jul



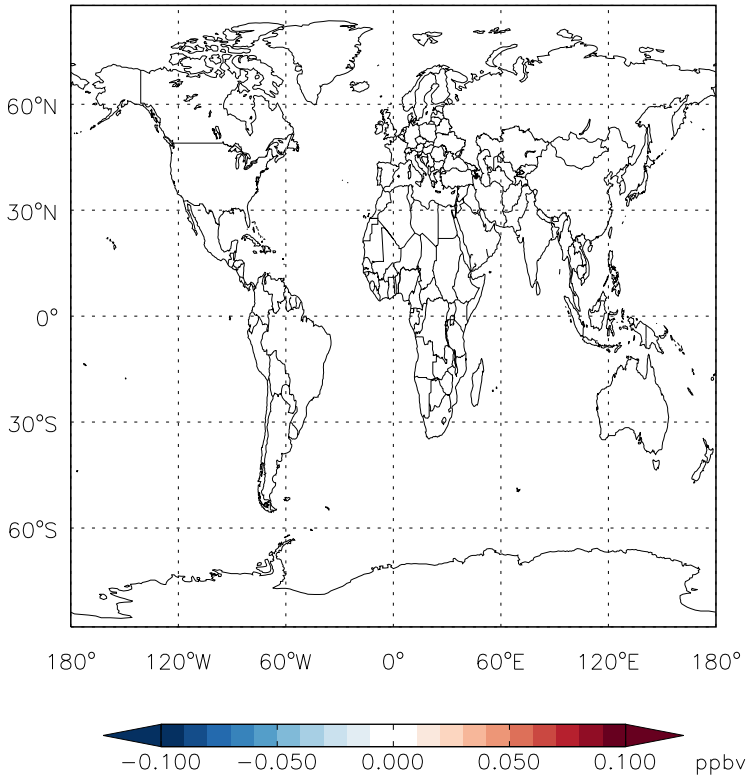
v11-01f-merra2-Run0 - v11-01d-Run1

ClNO3 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

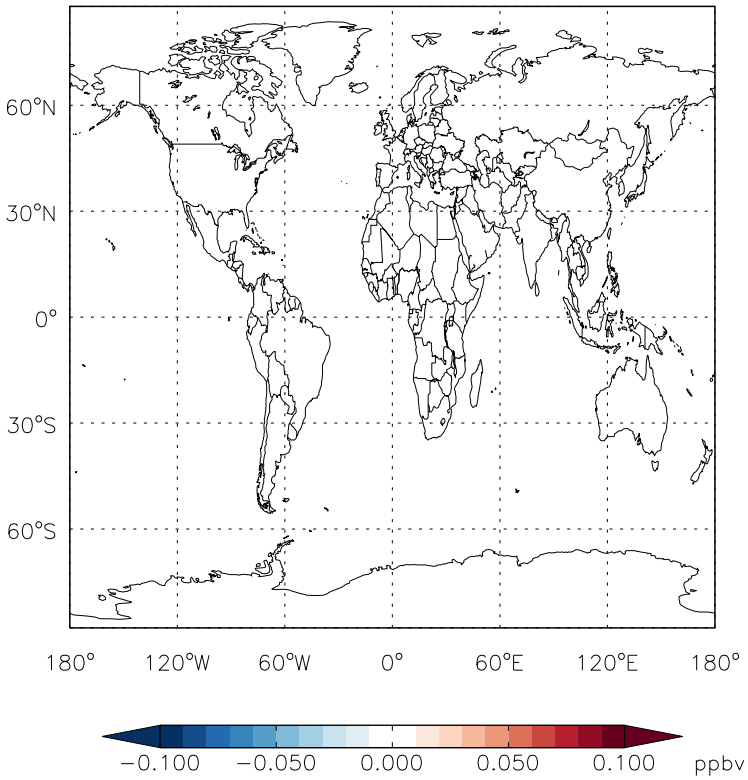
ClNO3- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

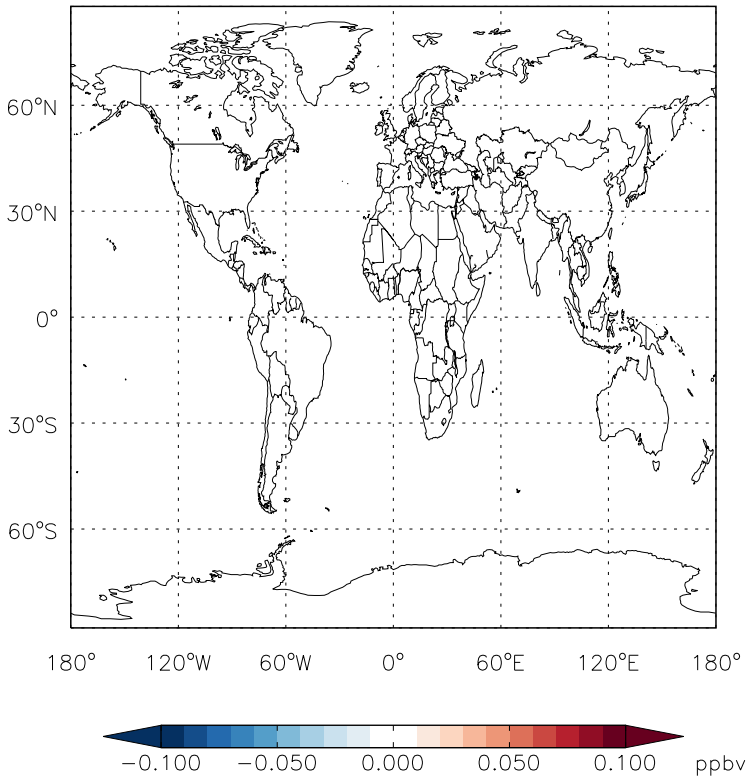
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClNO2 - Diff @ Surface for Jul



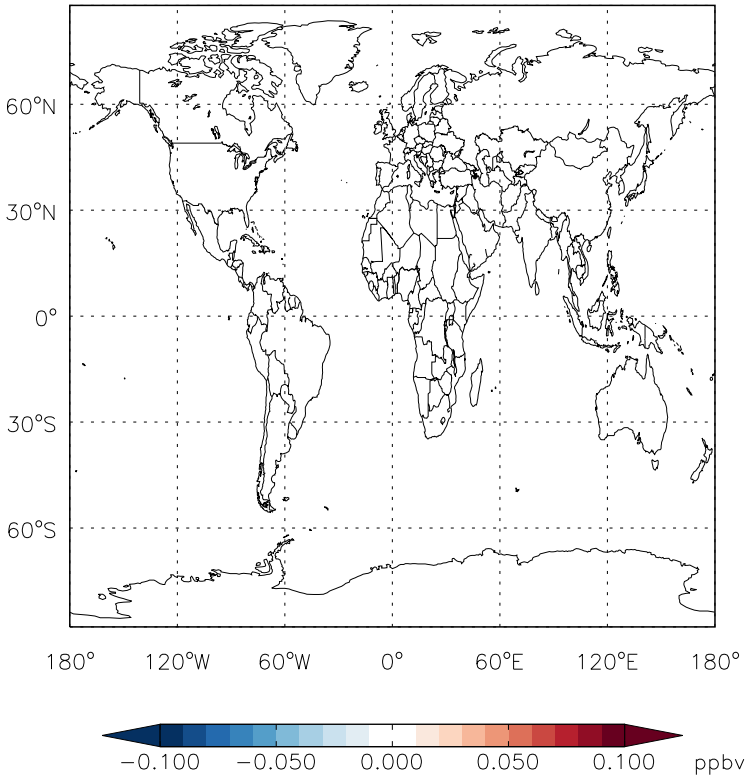
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClNO2- Diff @ 500 hPa for Jul



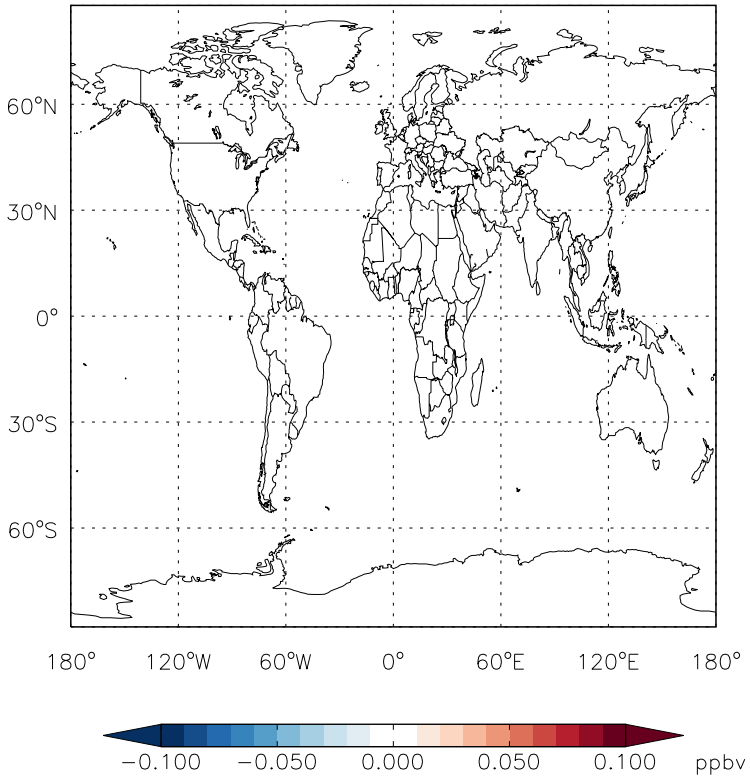
v11-01f-merra2-Run0 - v11-01d-Run1

ClNO2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

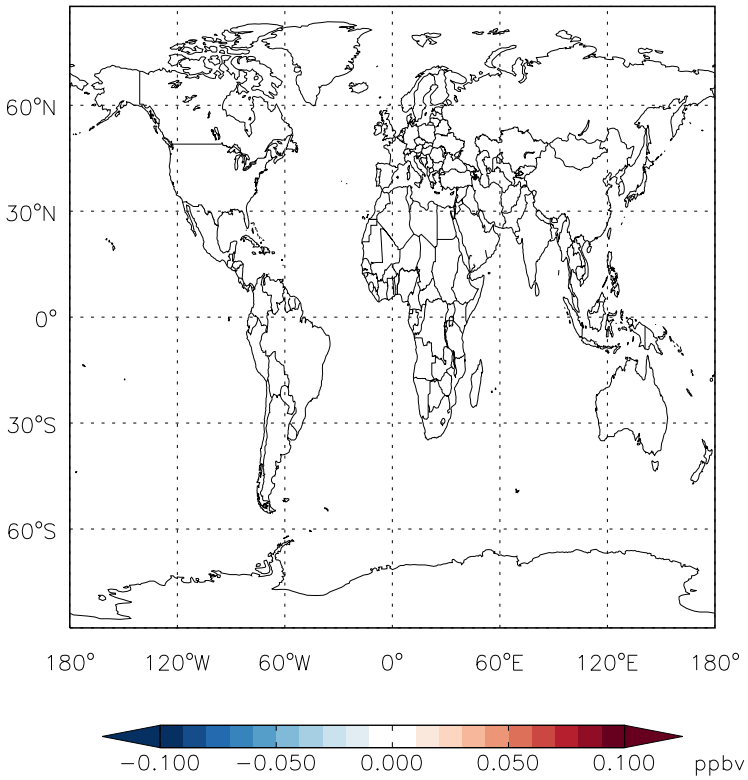
ClNO2- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

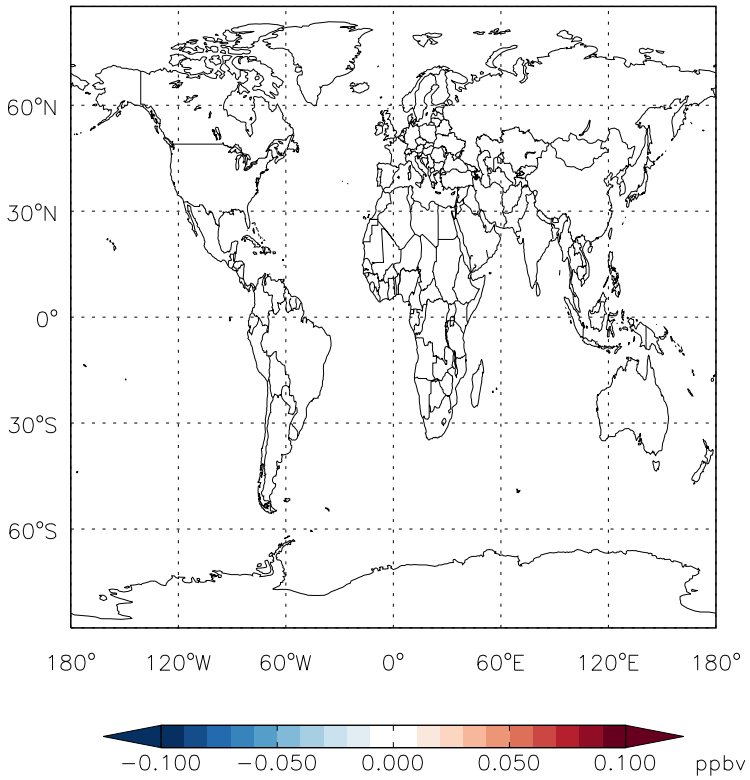
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClOO - Diff @ Surface for Jul



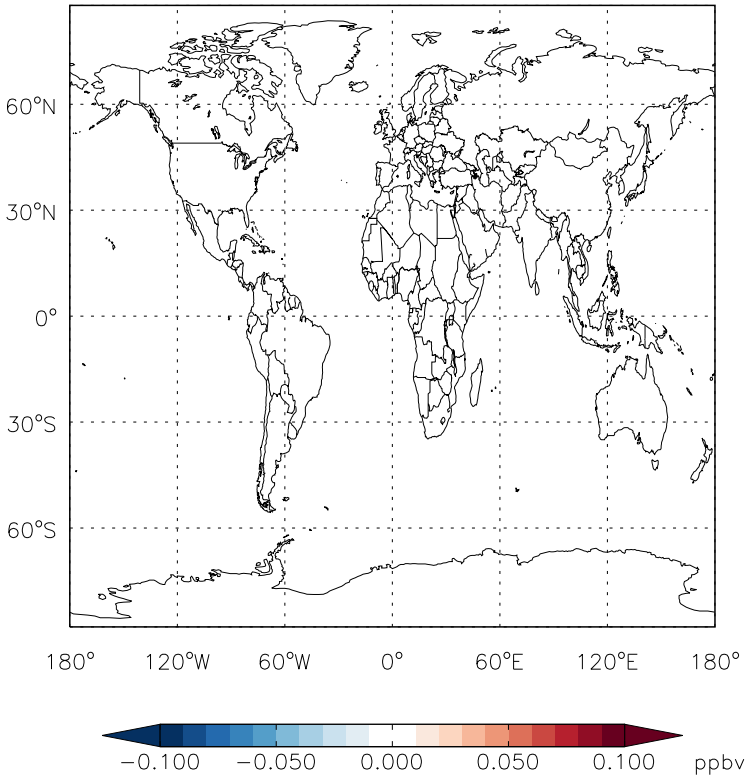
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

ClOO- Diff @ 500 hPa for Jul



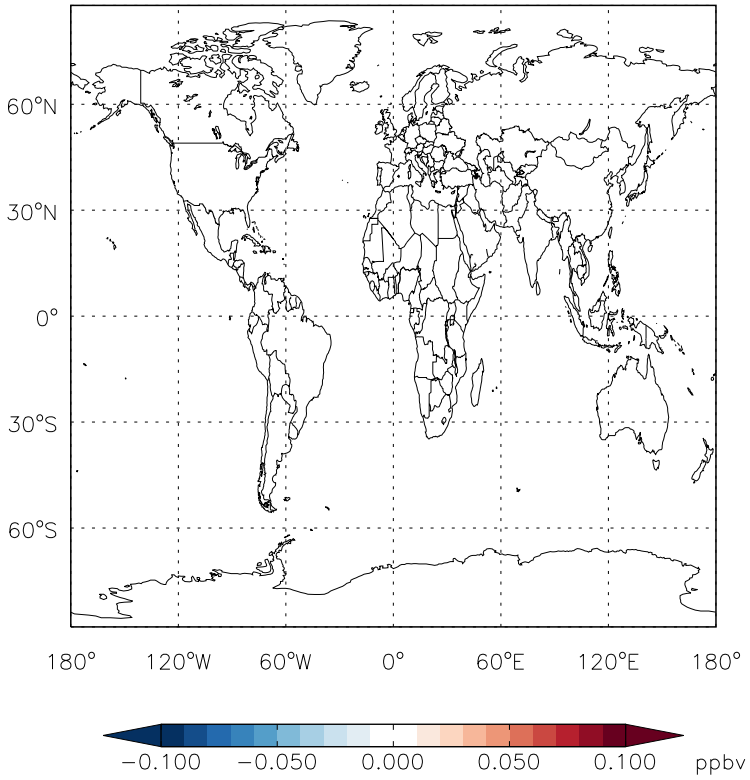
v11-01f-merra2-Run0 - v11-01d-Run1

ClOO - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

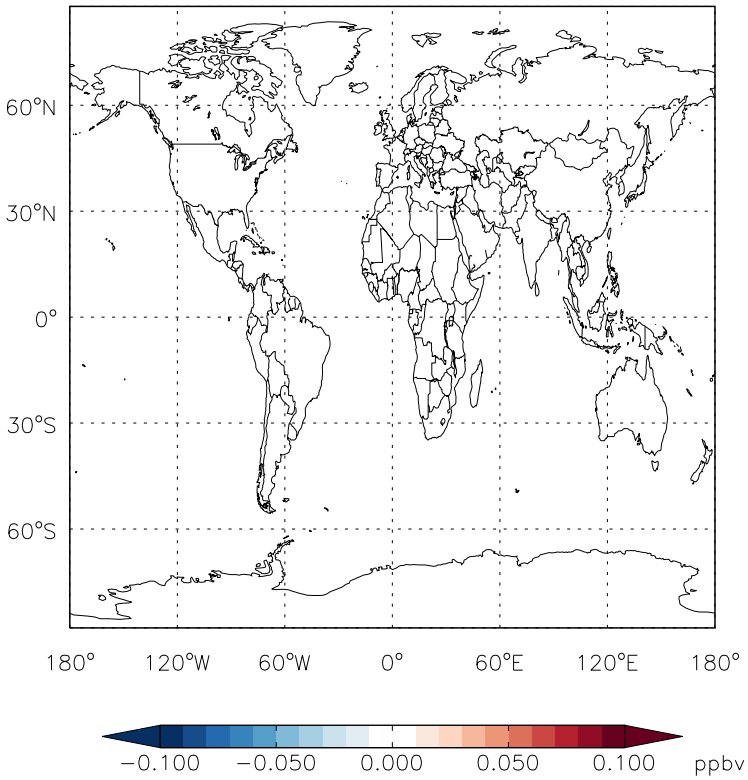
ClOO- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

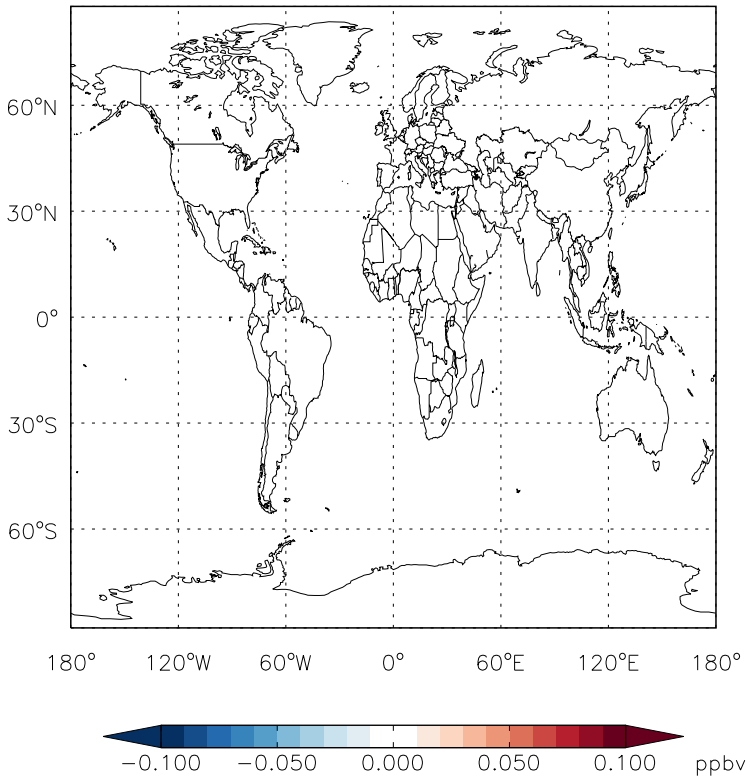
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

OClO − Diff @ Surface for Jul



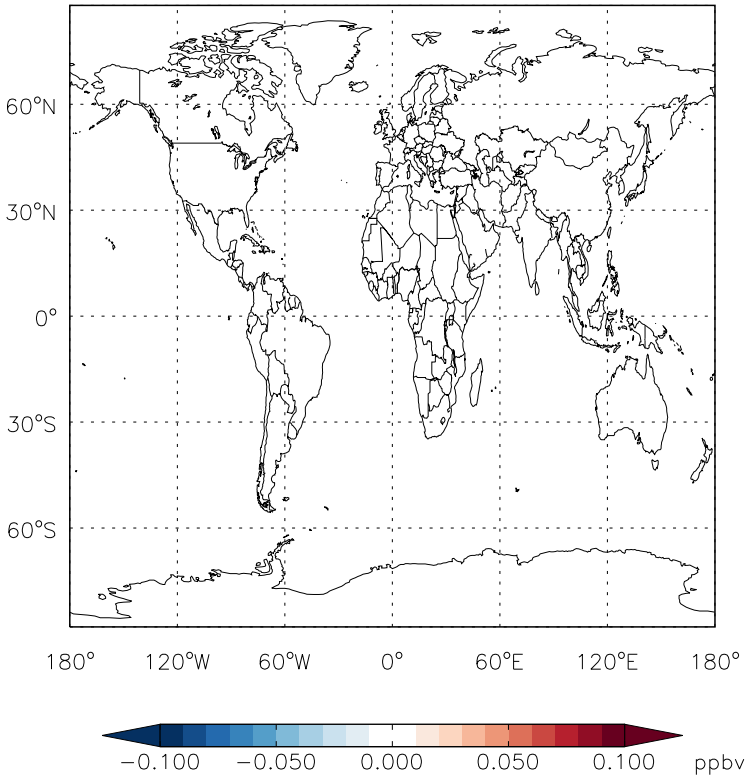
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

OClO− Diff @ 500 hPa for Jul



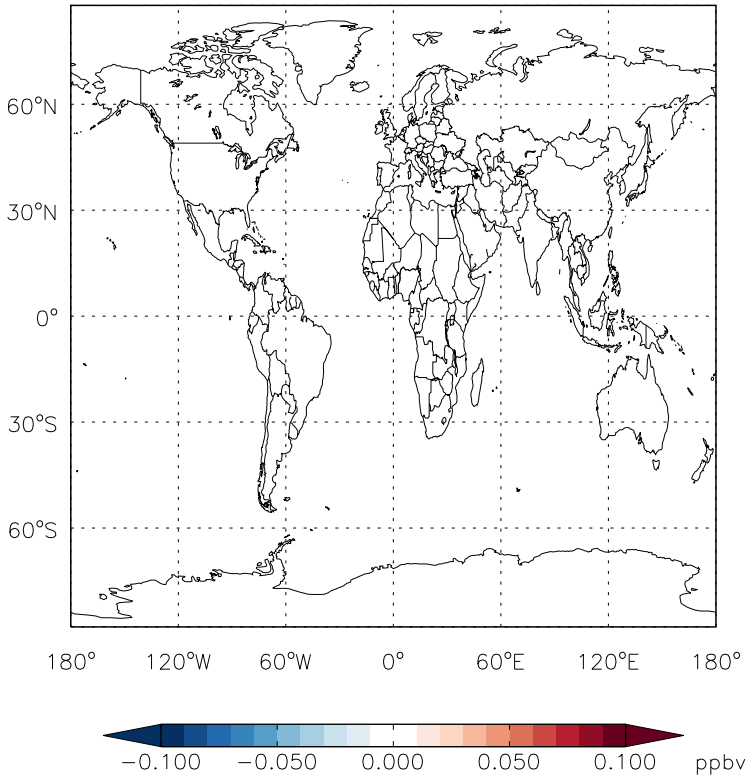
v11−01f−merra2−Run0 − v11−01d−Run1

OClO − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

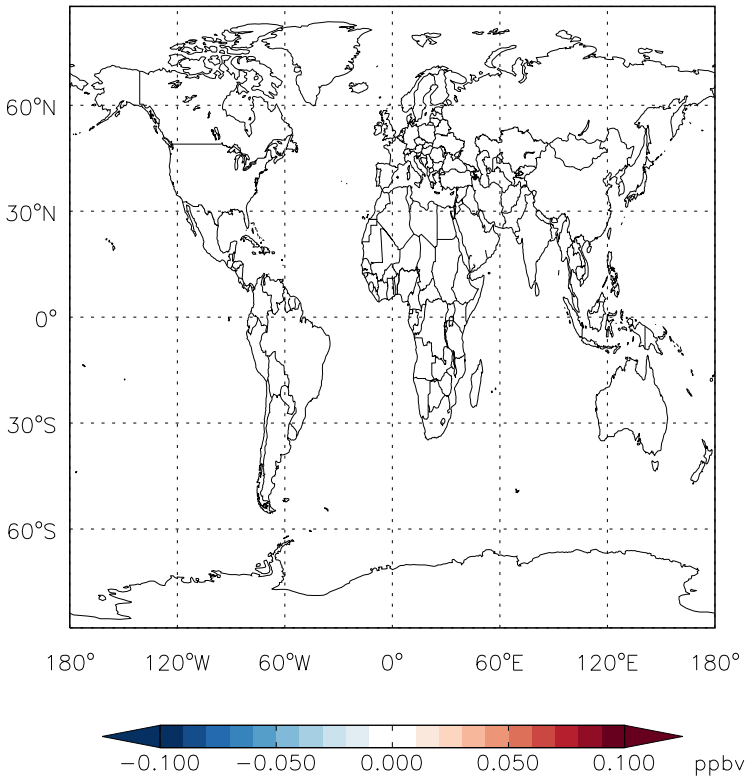
OClO− Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

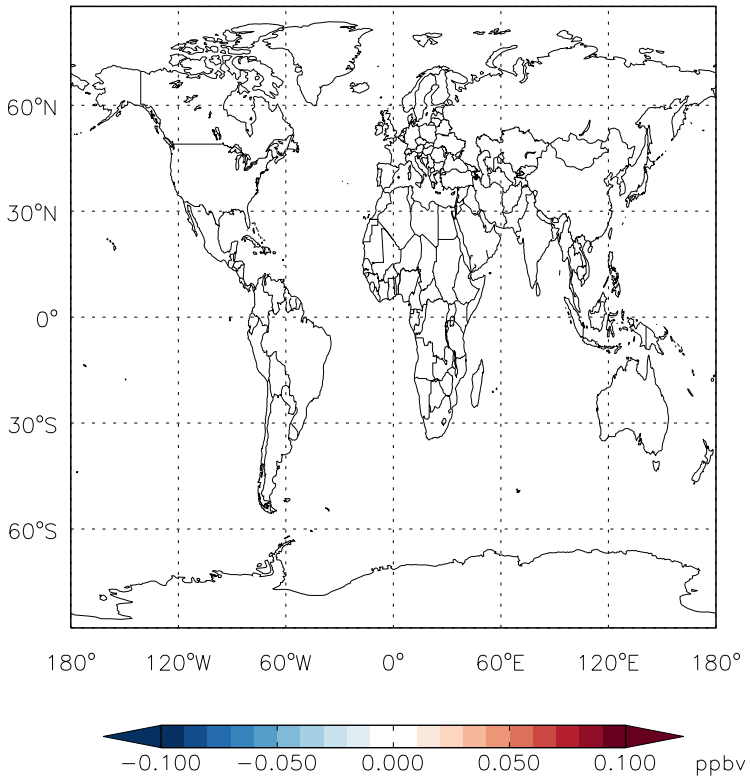
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

Cl2 − Diff @ Surface for Jul



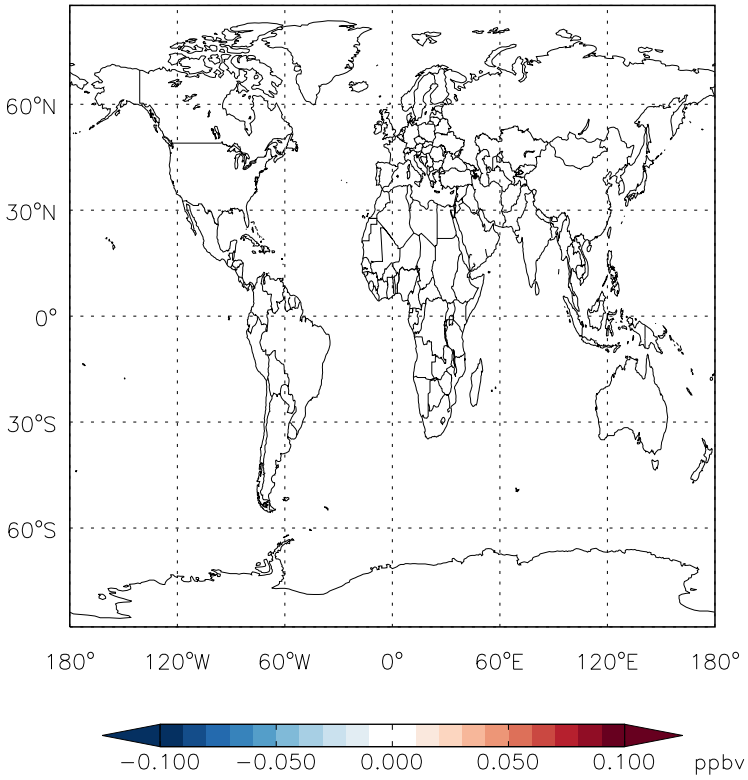
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

Cl2− Diff @ 500 hPa for Jul



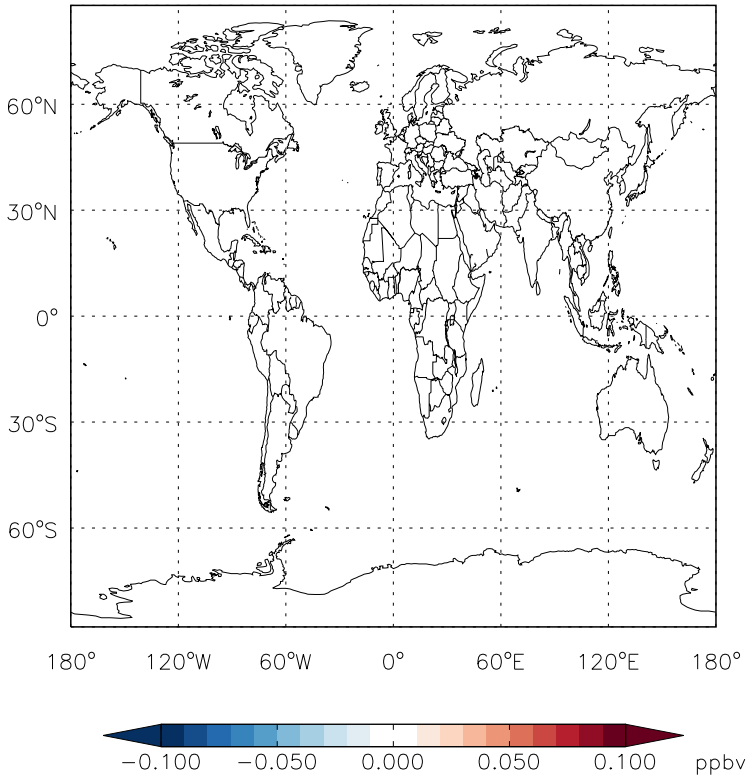
v11−01f−merra2−Run0 − v11−01d−Run1

Cl2 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

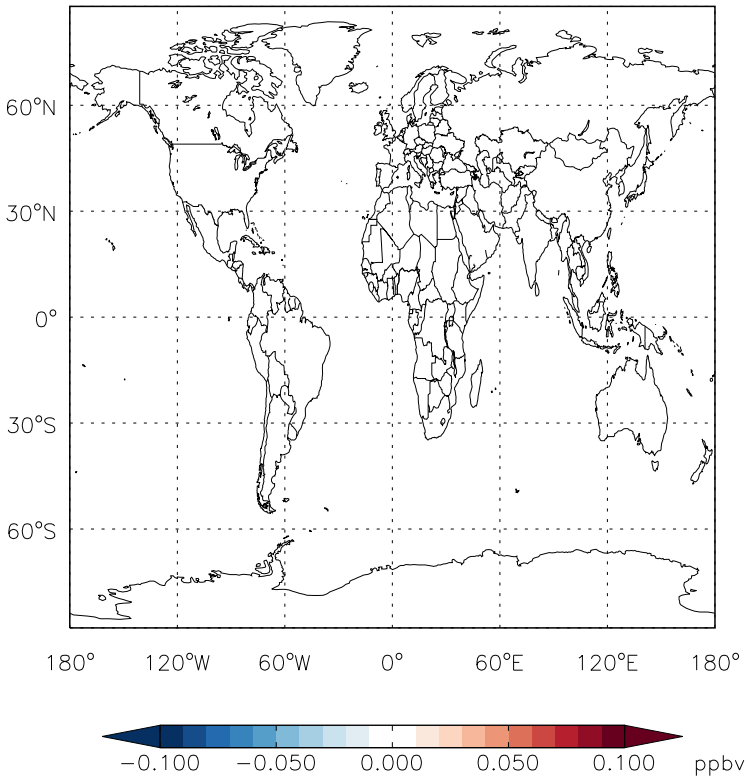
Cl2− Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

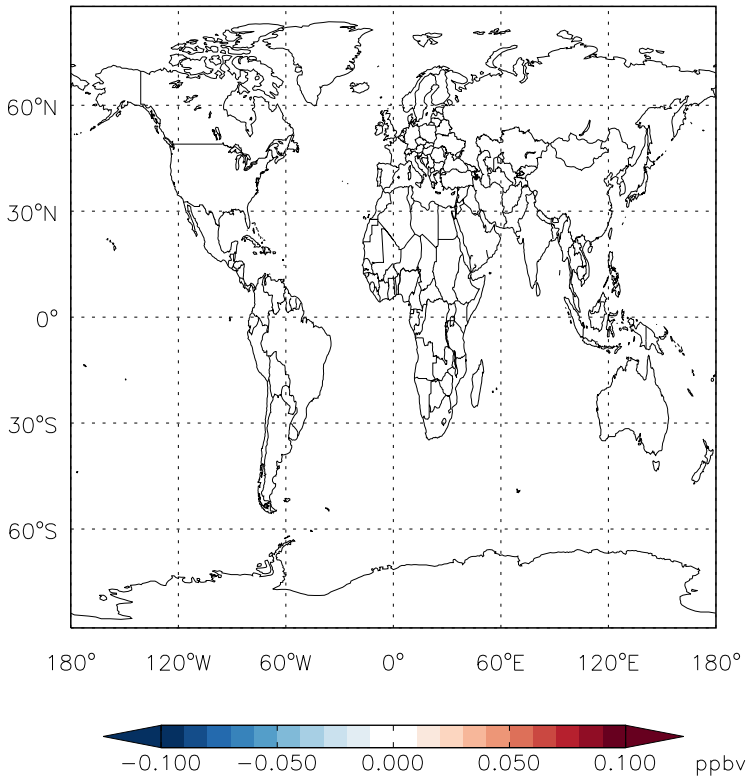
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

Cl2O2 - Diff @ Surface for Jul



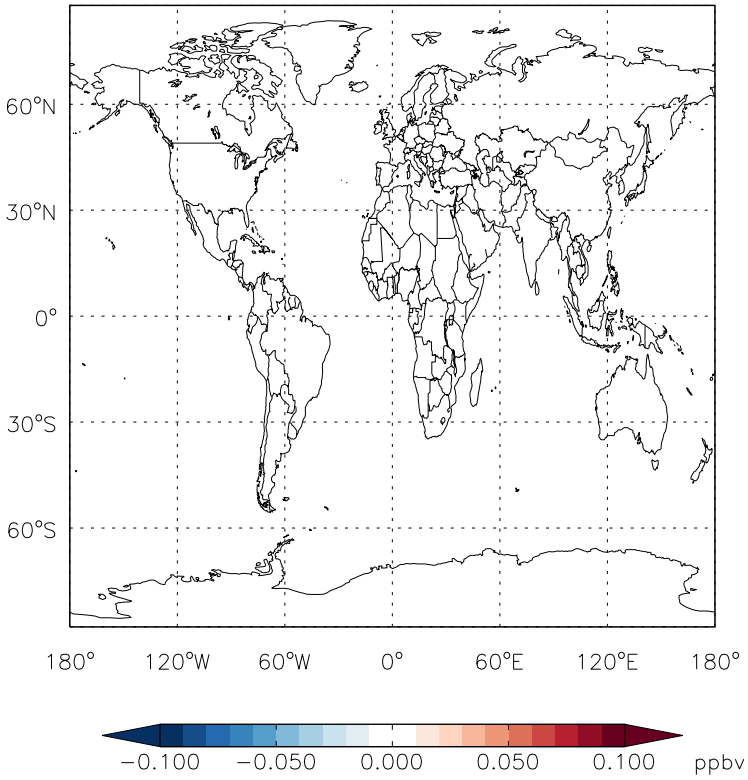
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

Cl2O2- Diff @ 500 hPa for Jul



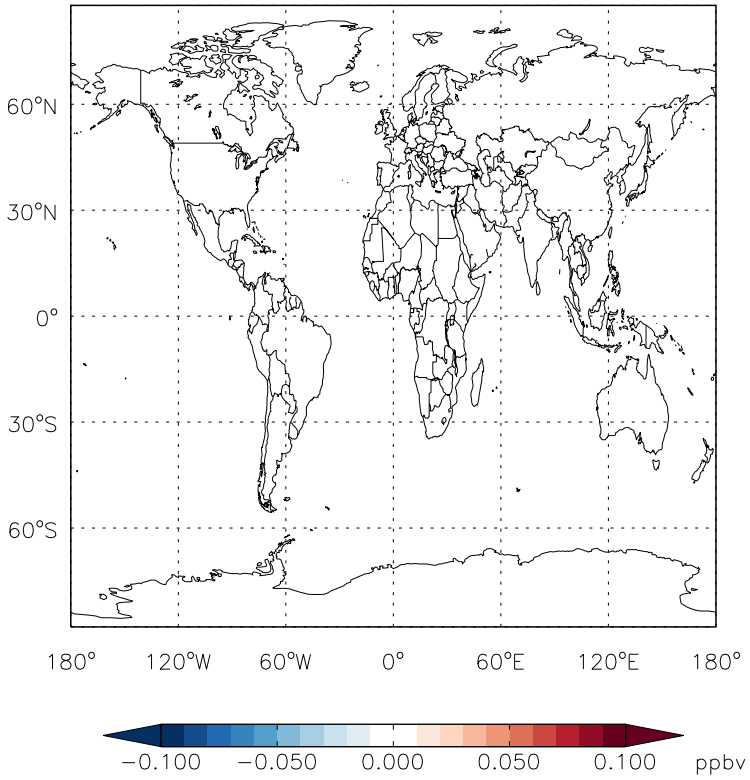
v11-01f-merra2-Run0 - v11-01d-Run1

Cl2O2 - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

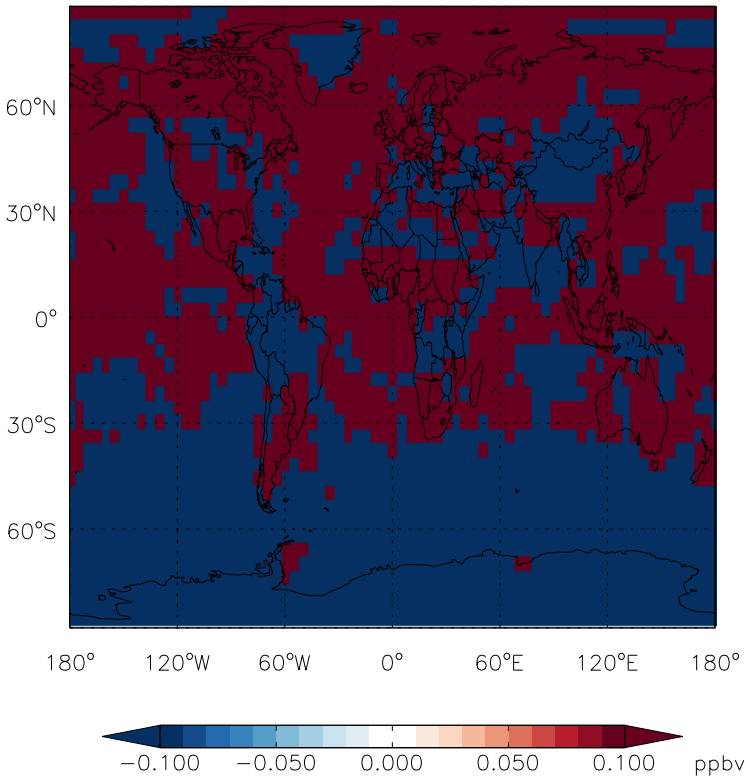
Cl2O2- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

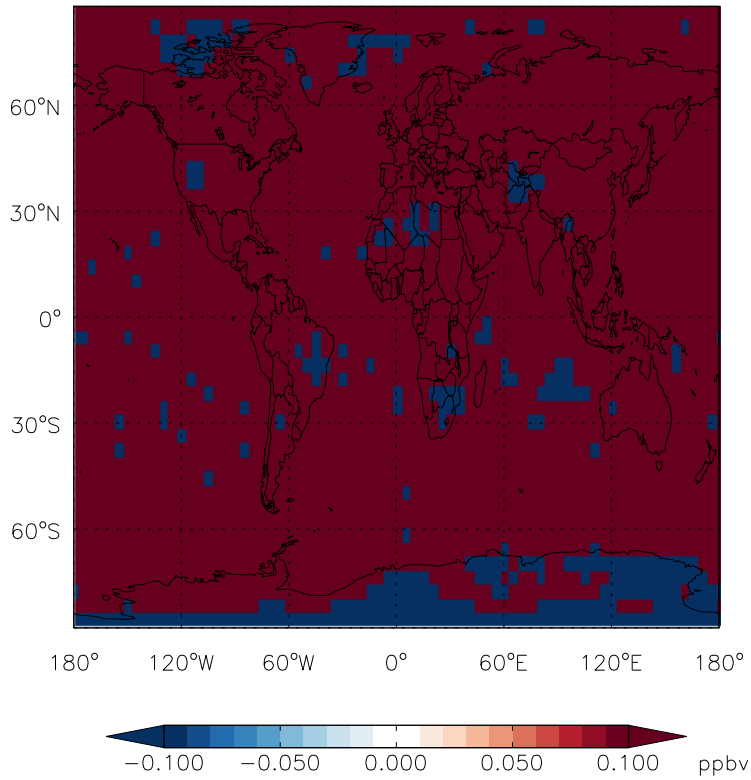
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H2O - Diff @ Surface for Jul



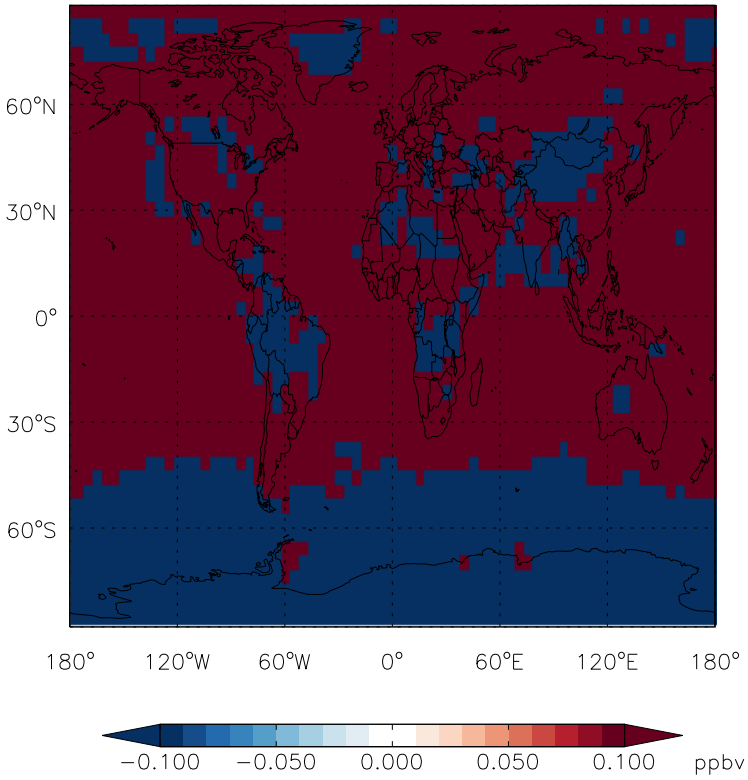
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

H2O- Diff @ 500 hPa for Jul



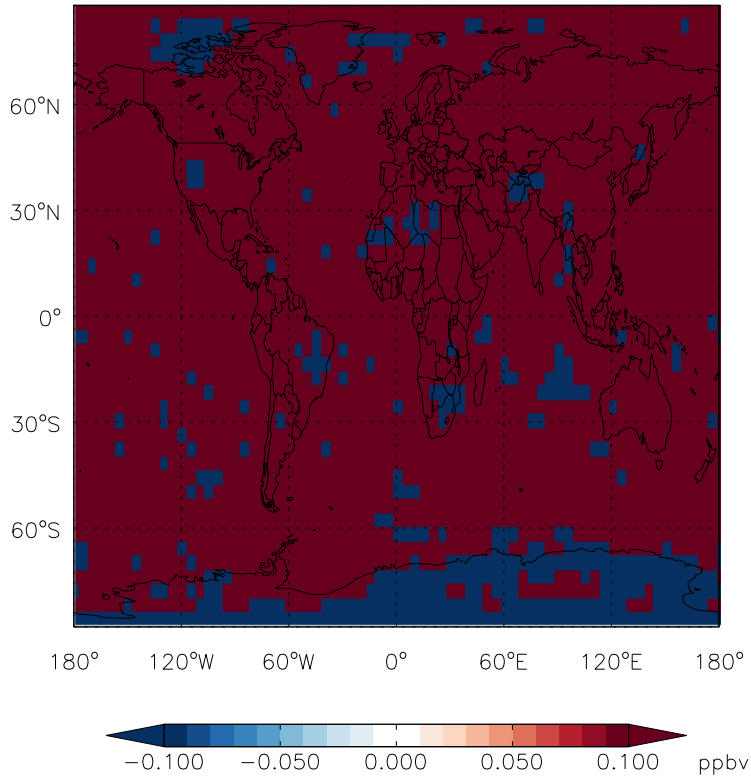
v11-01f-merra2-Run0 - v11-01d-Run1

H2O - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

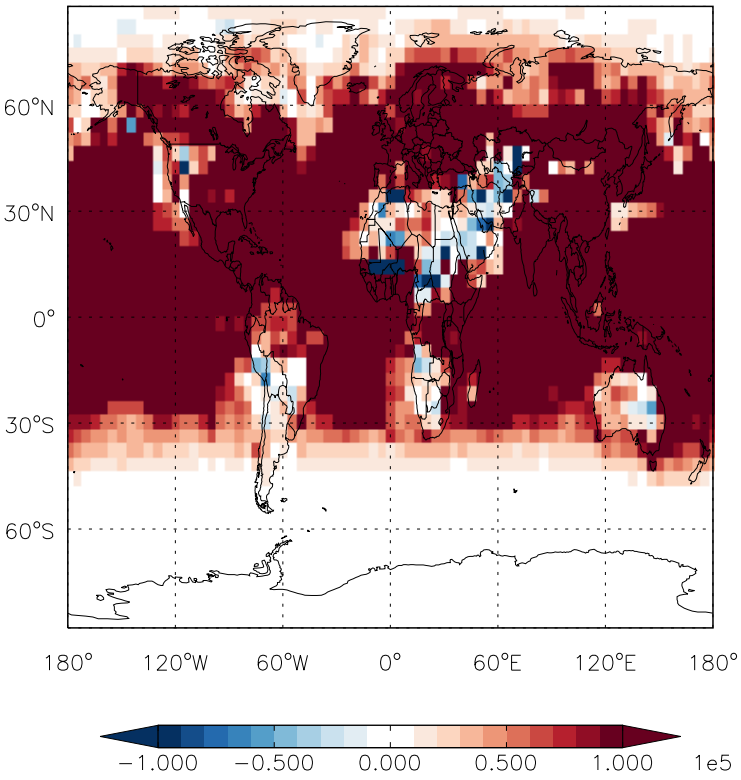
H2O- Diff @ 500 hPa for Jul



GEOS-Chem Difference Maps at surface and 500 hPa

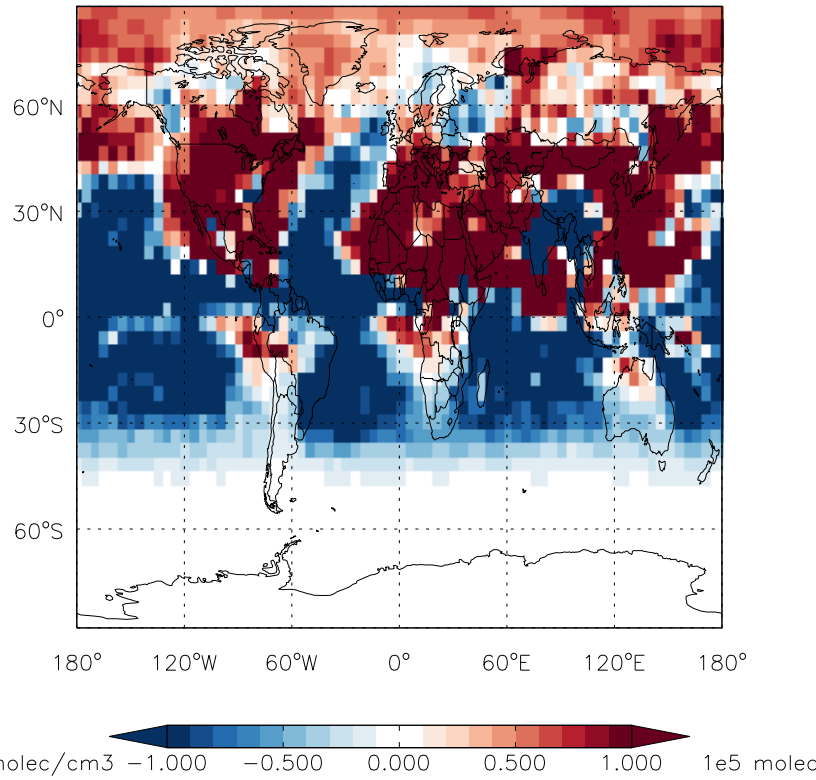
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

OH - Diff @ Surface for Jul



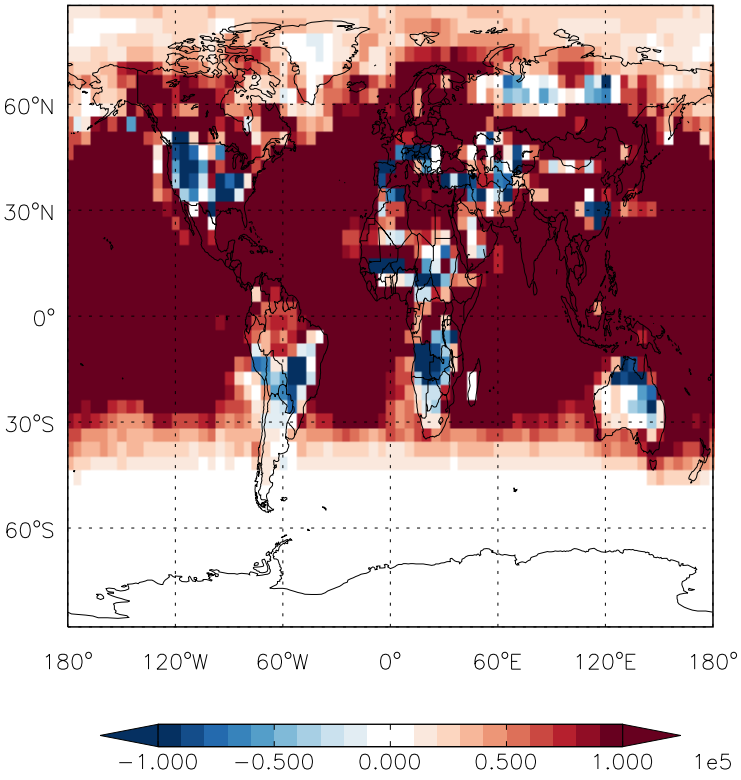
v11-01f-merra2-Run0 - v11-01f-geosfp-Run0

OH- Diff @ 500 hPa for Jul



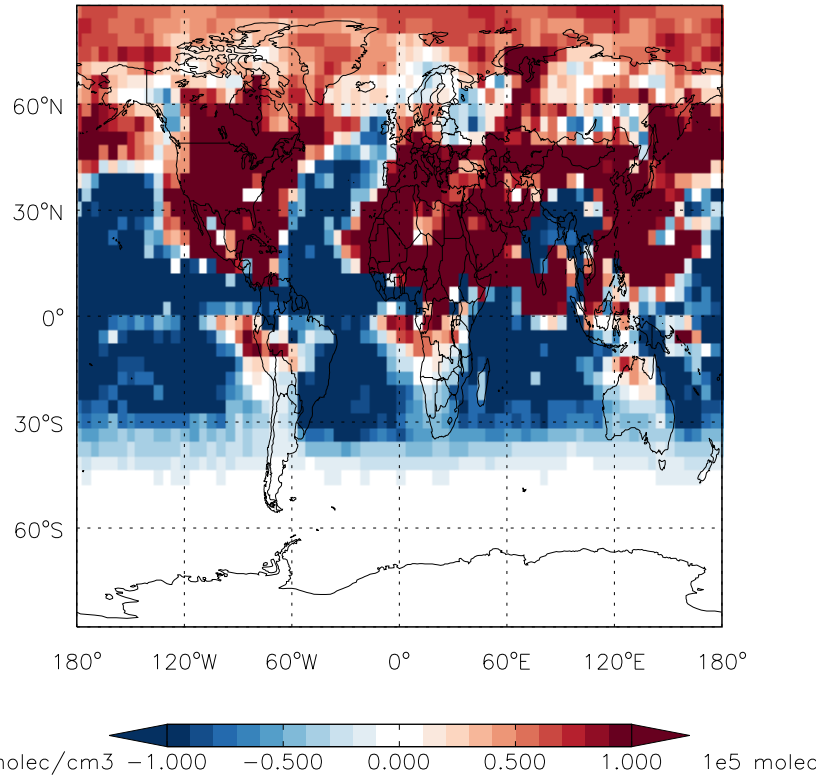
v11-01f-merra2-Run0 - v11-01d-Run1

OH - Diff @ Surface for Jul



v11-01f-merra2-Run0 - v11-01d-Run1

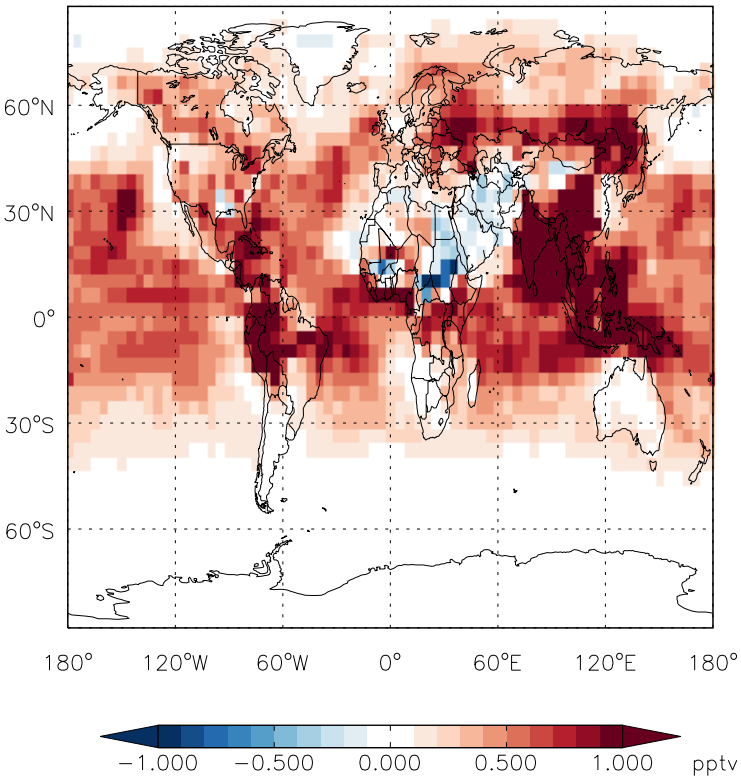
OH- Diff @ 500 hPa for Jul



GEOS−Chem Difference Maps at surface and 500 hPa

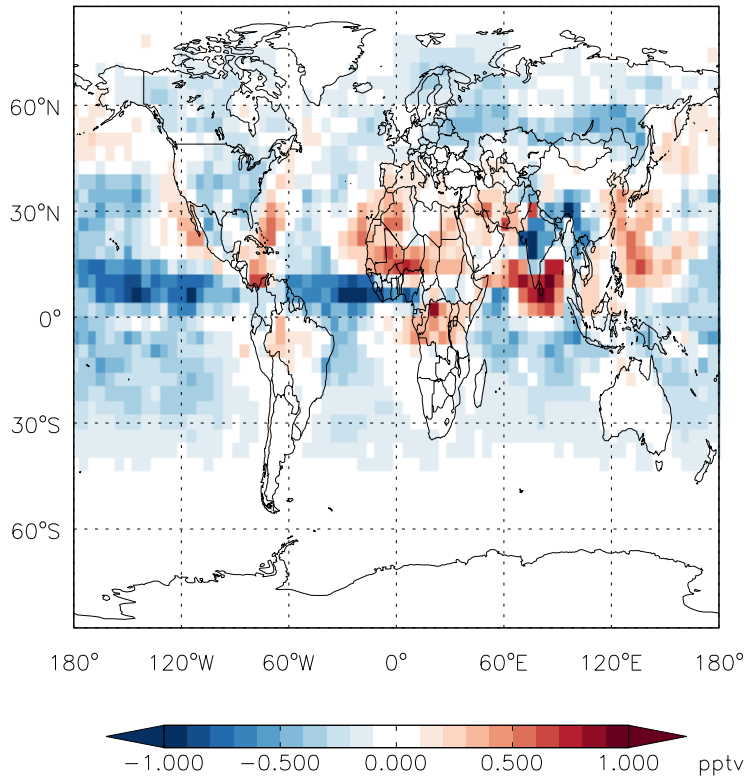
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

HO2 − Diff @ Surface for Jul



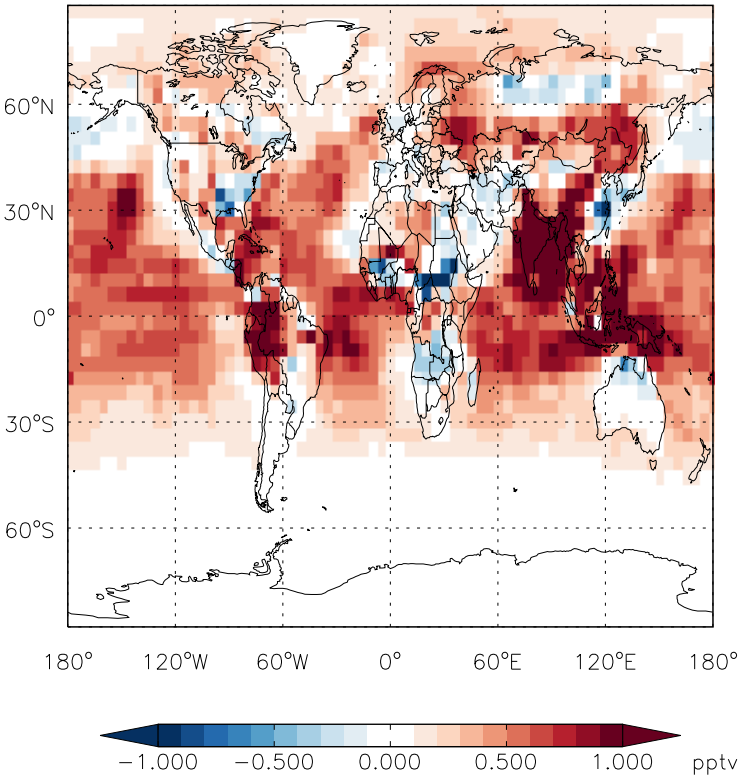
v11−01f−merra2−Run0 − v11−01f−geosfp−Run0

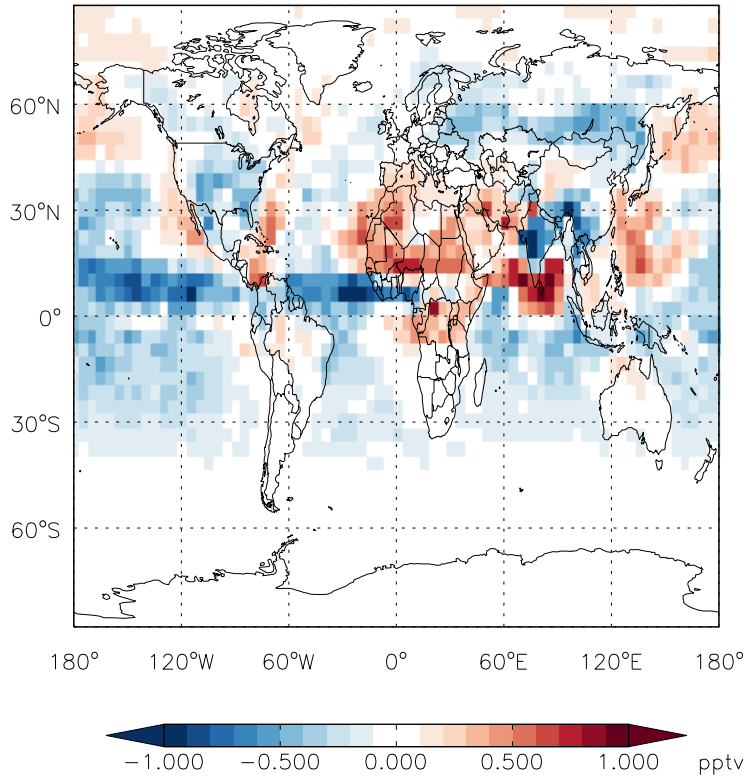
HO2− Diff @ 500 hPa for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

HO2 − Diff @ Surface for Jul



v11−01f−merra2−Run0 − v11−01d−Run1

HO2− Diff @ 500 hPa for Jul