EmisALD2_Ship (Apr2019)

GCHP_14.0.0 (Ref)
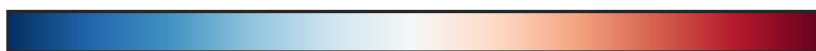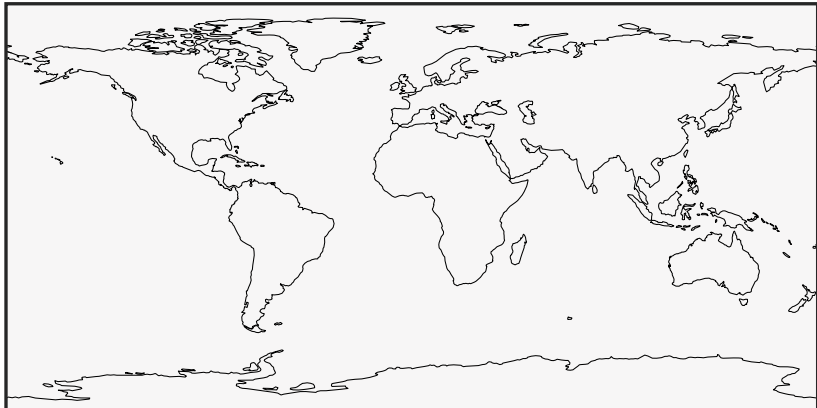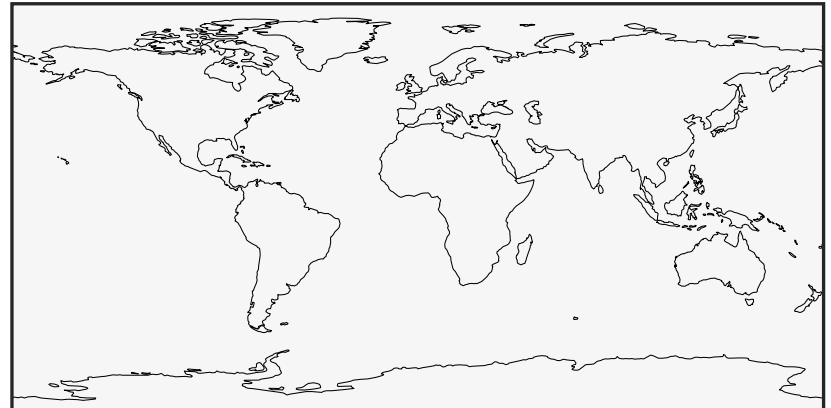c24
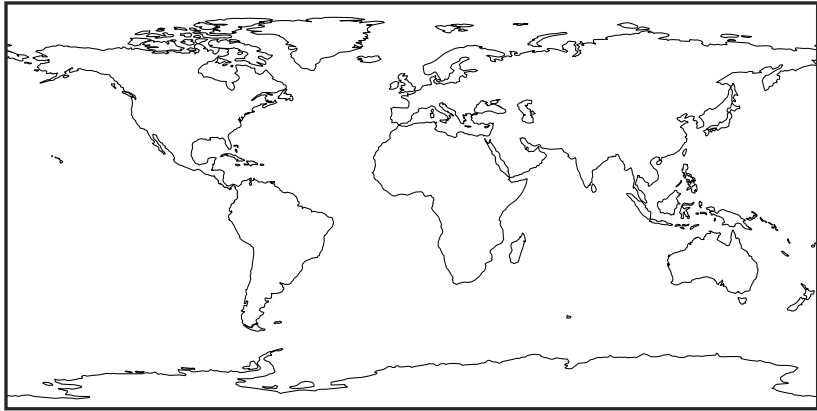
GCHP_14.2.0 (Dev)
c24

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s
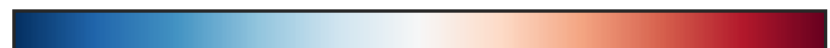
Zero throughout domain
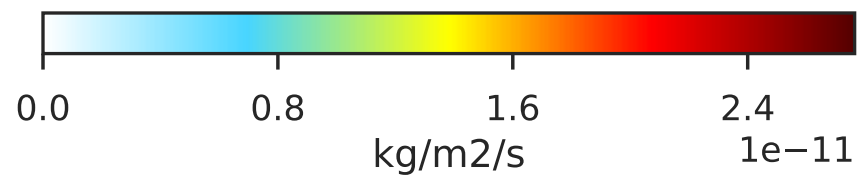kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Undefined throughout domain
unitless

Undefined throughout domain
unitless

EmisALK4_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

GCHP_14.2.0 (Dev)
c24

kg/m2/s
1e−11

kg/m2/s
1e−11

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Zero throughout domain
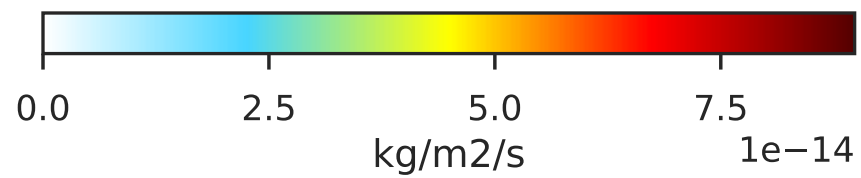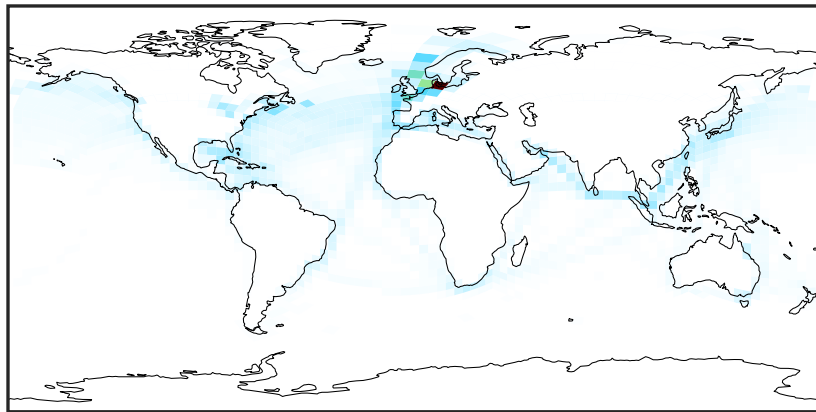kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
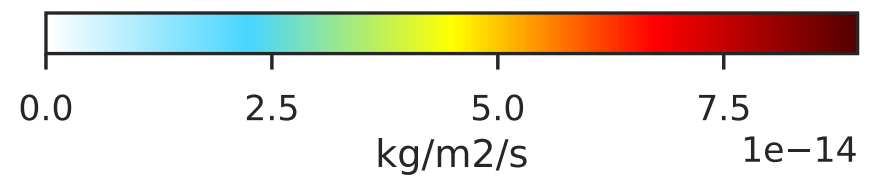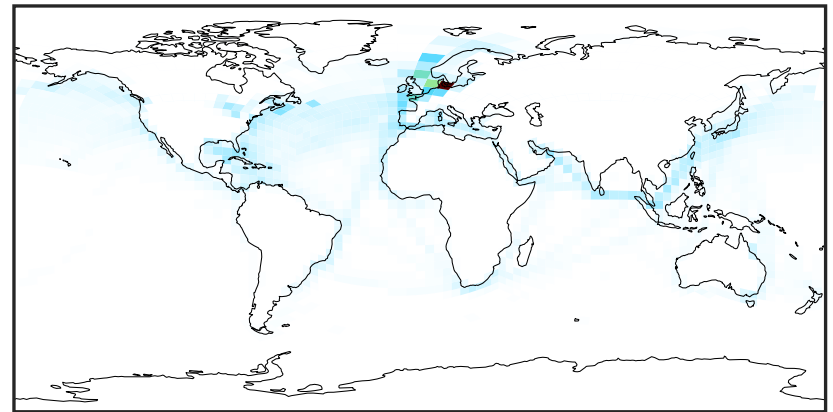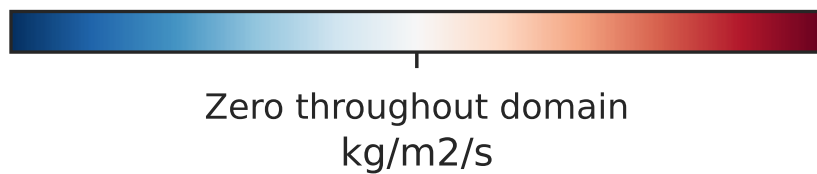Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

EmisBCPI_Ship (Apr2019)
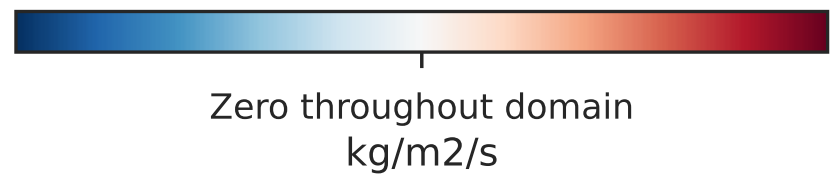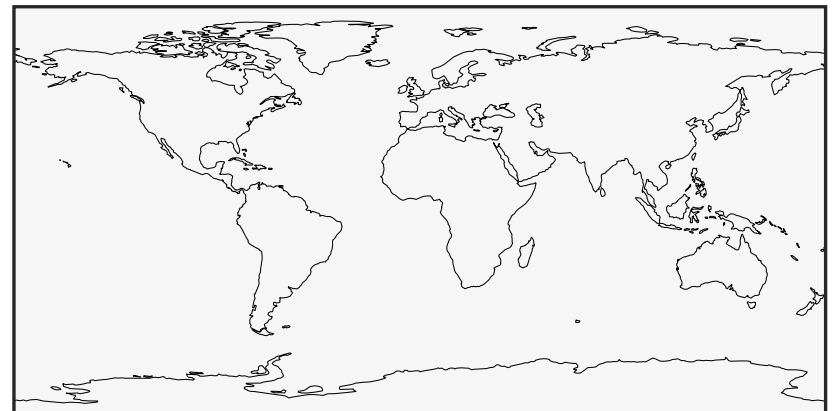
EmisBCPO_Ship (Apr2019)

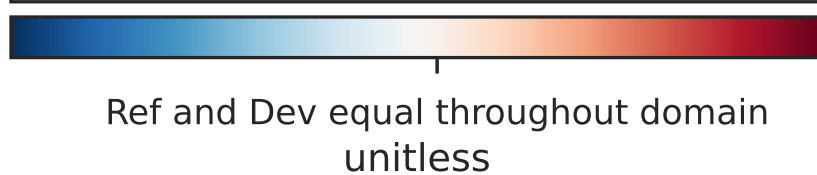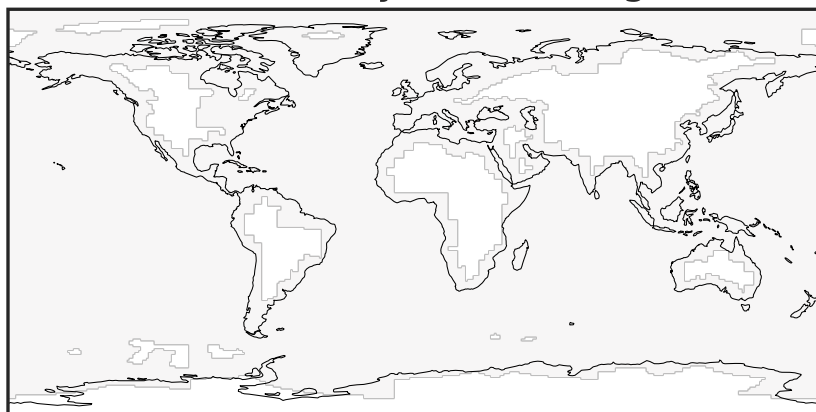## GCHP_14.0.0 (Ref)
c24

GCHP_14.2.0 (Dev)
c24

kg/m2/s
1e−13

kg/m2/s
1e−13

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

EmisBENZ_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24
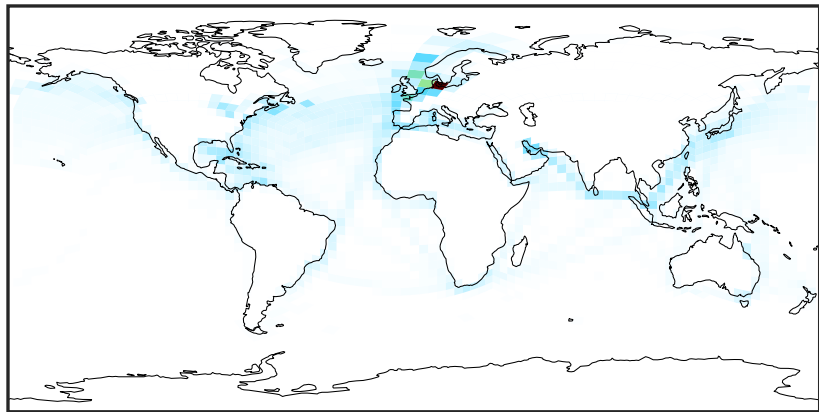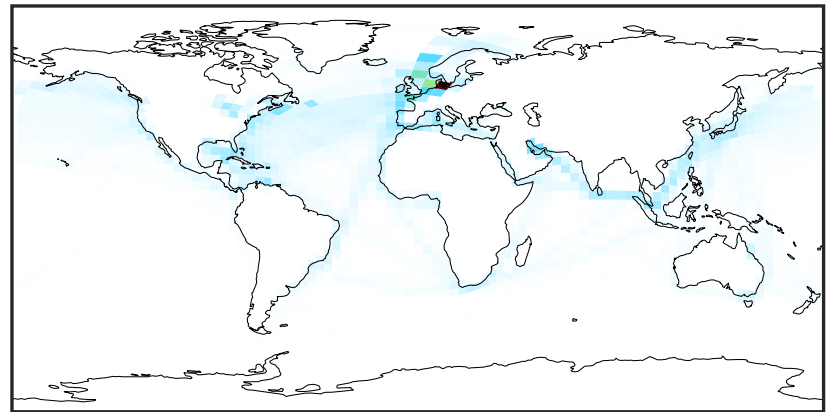
GCHP_14.2.0 (Dev)
c24

kg/m2/s

kg/m2/s

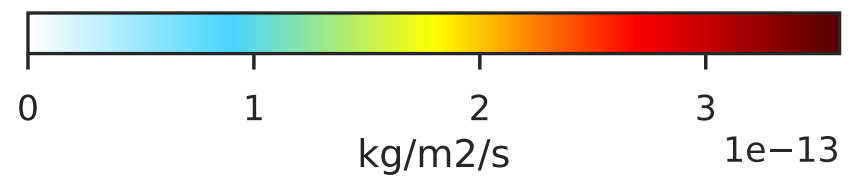Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

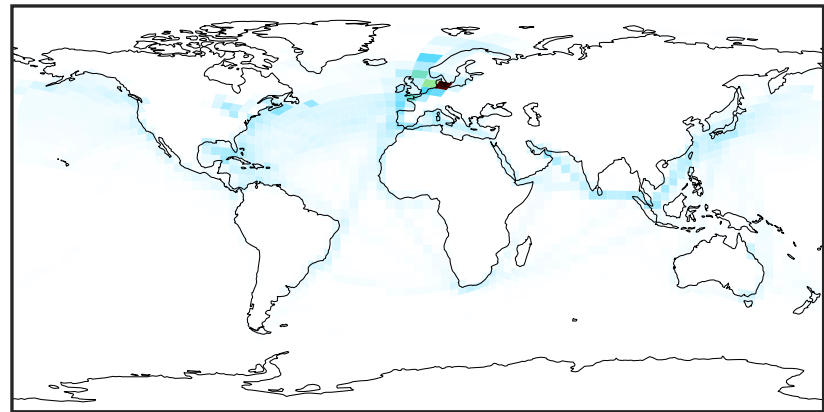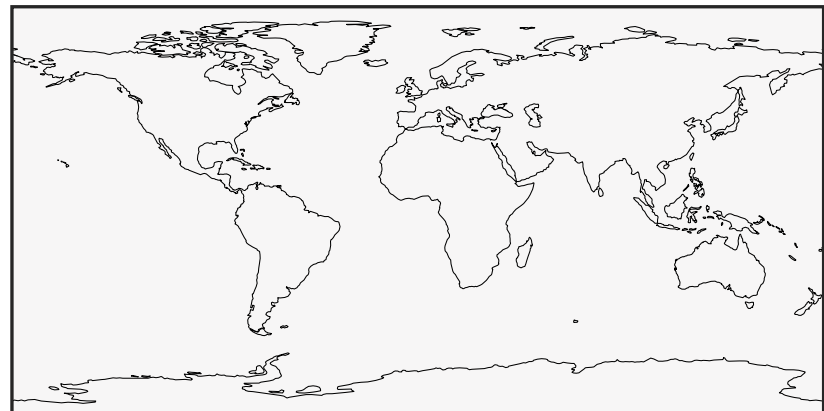Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

EmisC2H2_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24
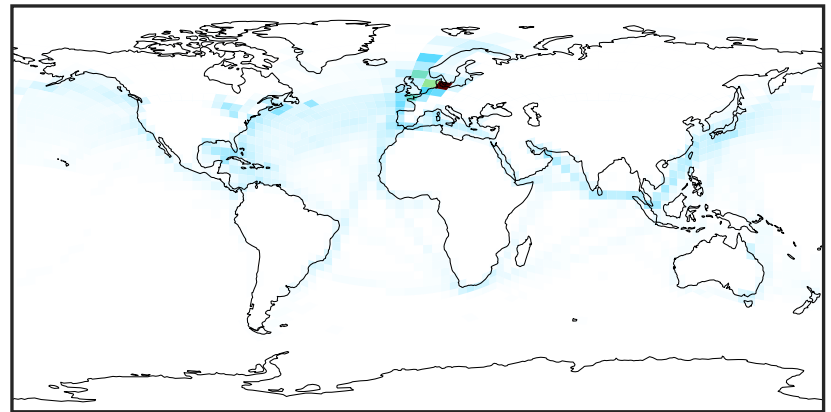
GCHP_14.2.0 (Dev)
c24

kg/m2/s

kg/m2/s
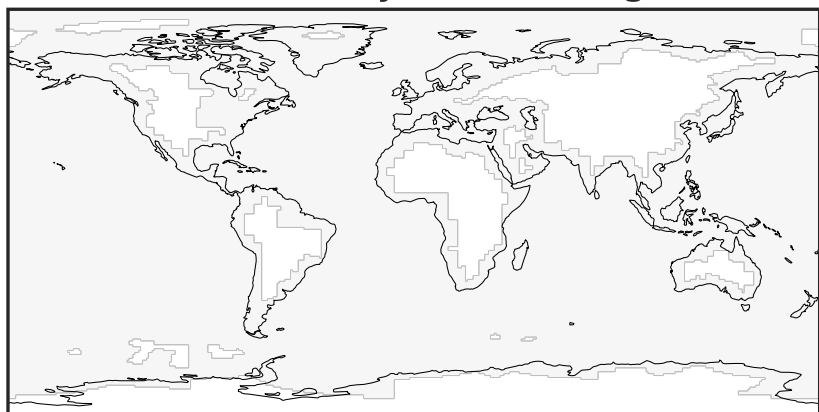
Difference (1x1.25)
Dev - Ref, Dynamic Range

Zero throughout domain
kg/m2/s

Difference (1x1.25)
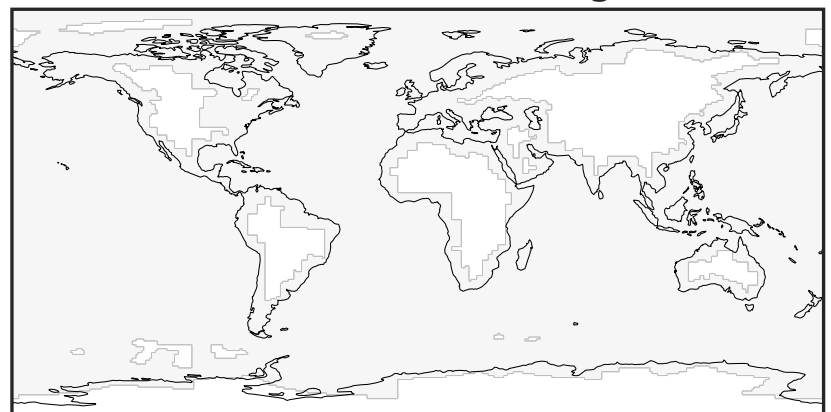### Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
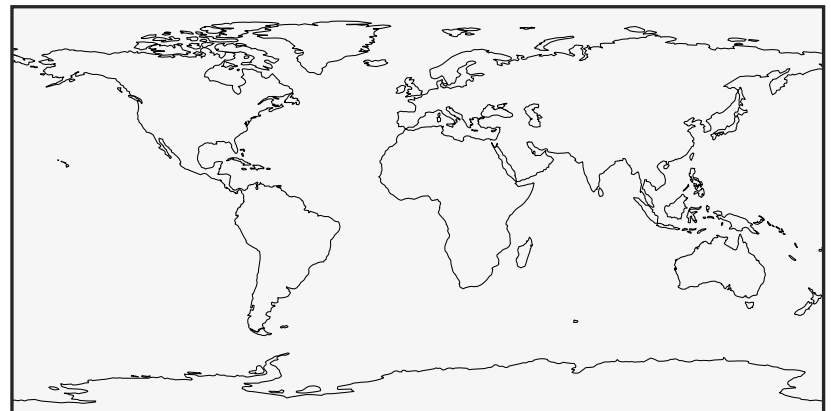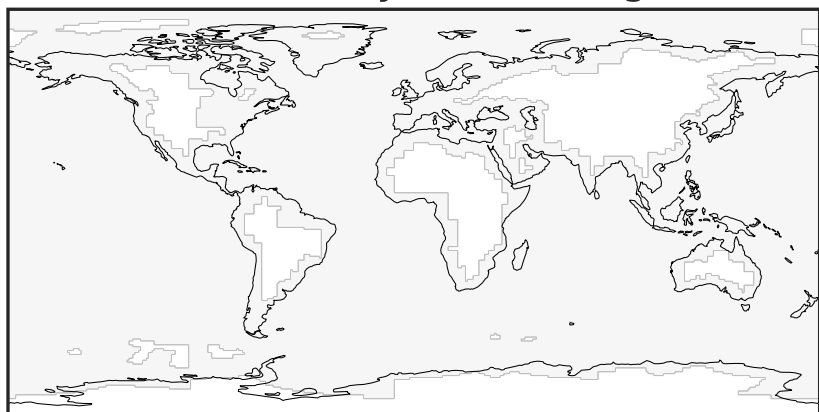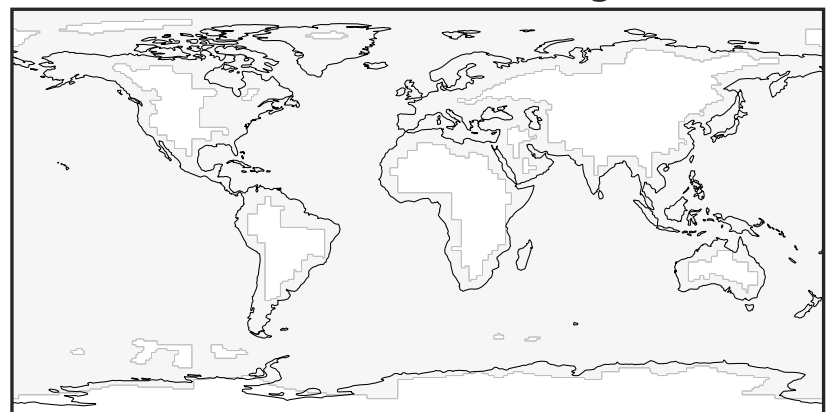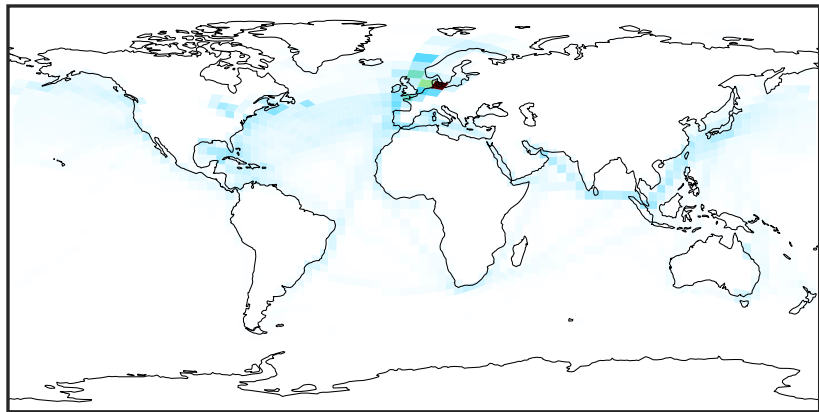### Dev/Ref, Dynamic Range
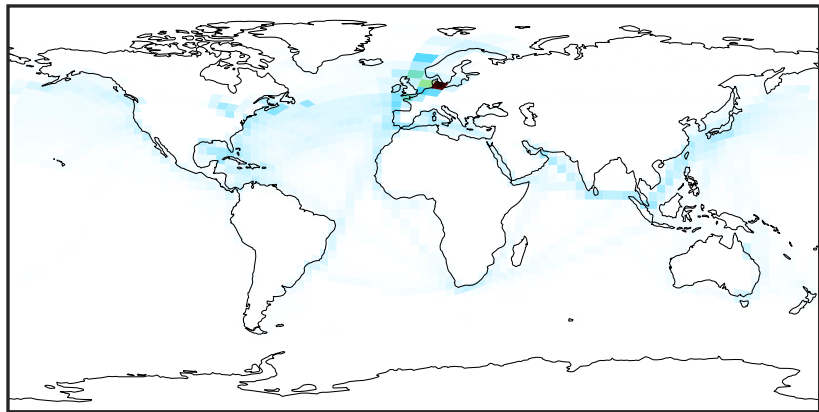
Ref and Dev equal throughout domain
unitless

Ratio (1x1.25)
Dev/Ref, Fixed Range
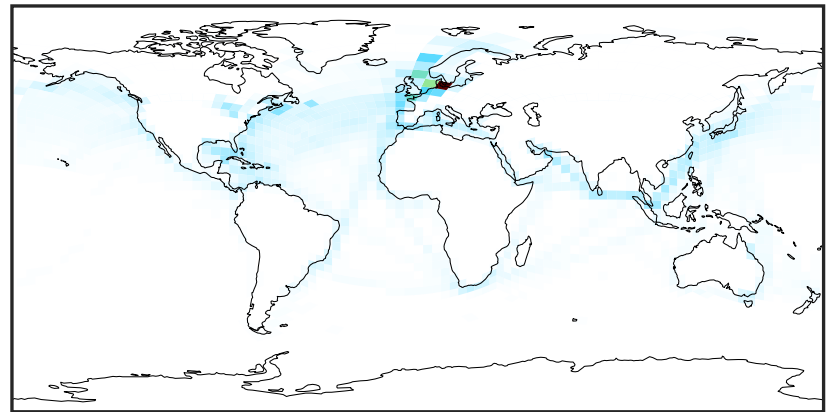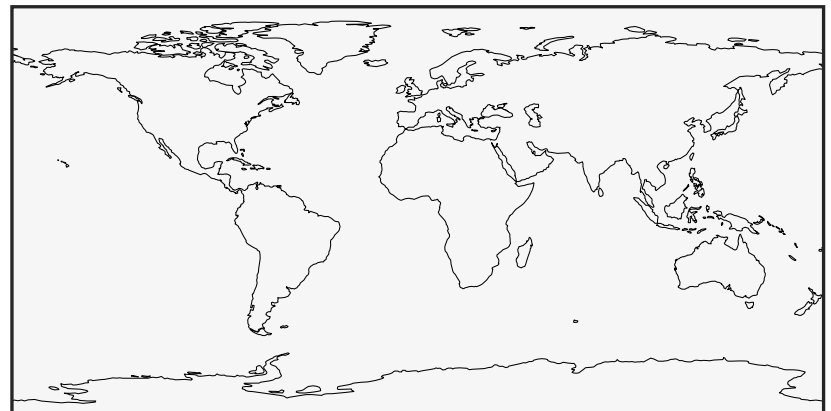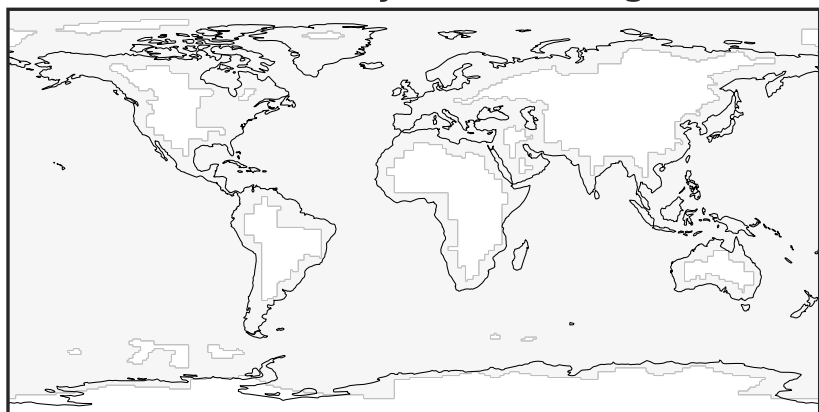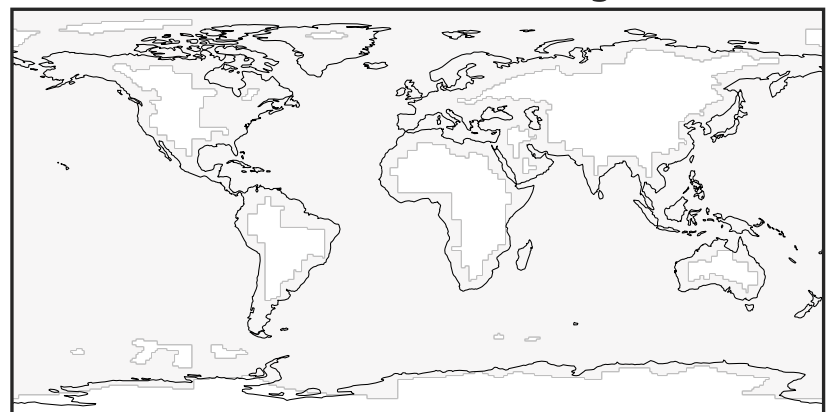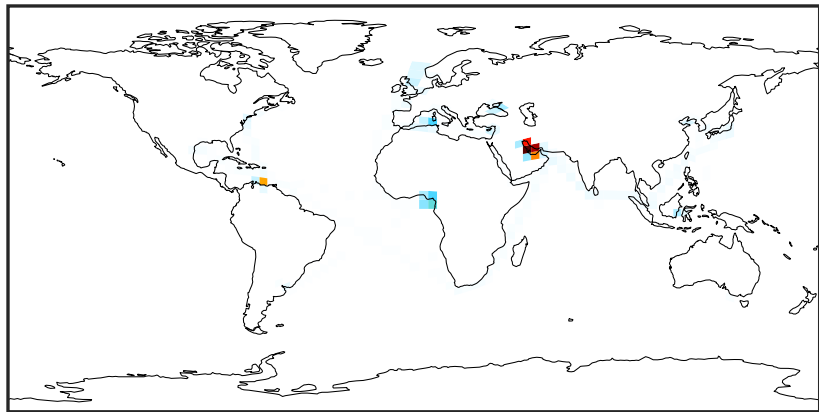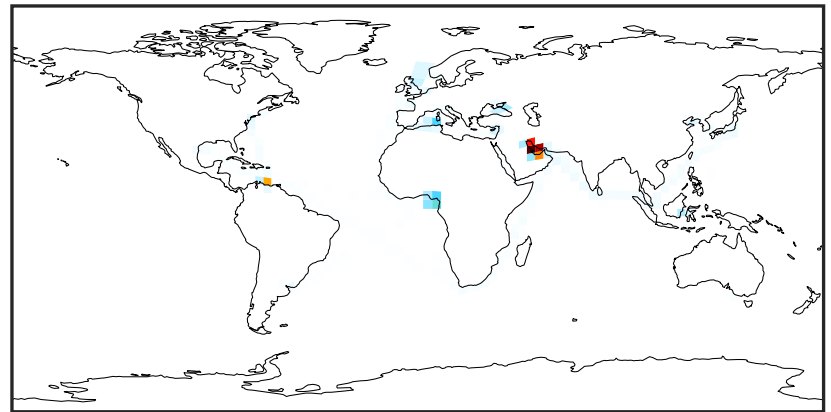
Ref and Dev equal throughout domain
unitless

EmisC2H4_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

kg/m2/s

GCHP_14.2.0 (Dev)
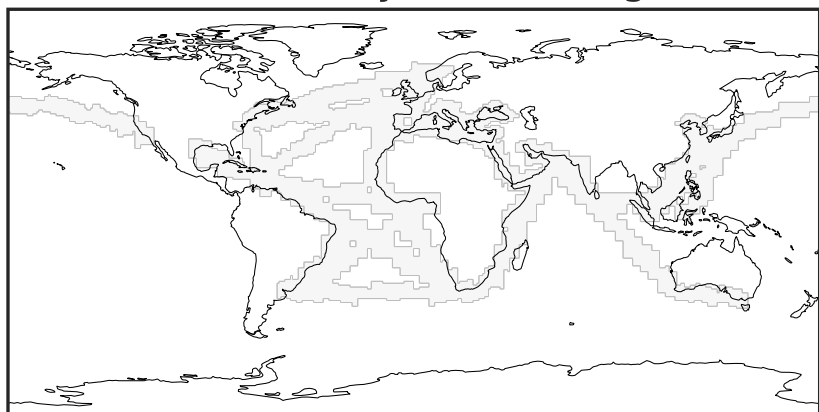### c24

kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Zero throughout domain
kg/m2/s

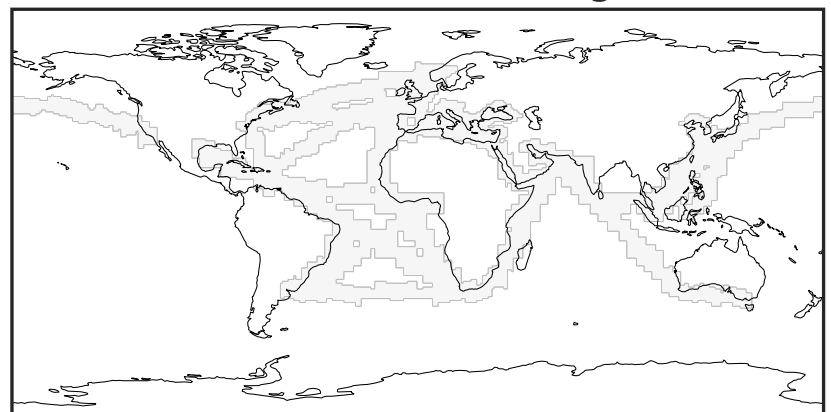## Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range
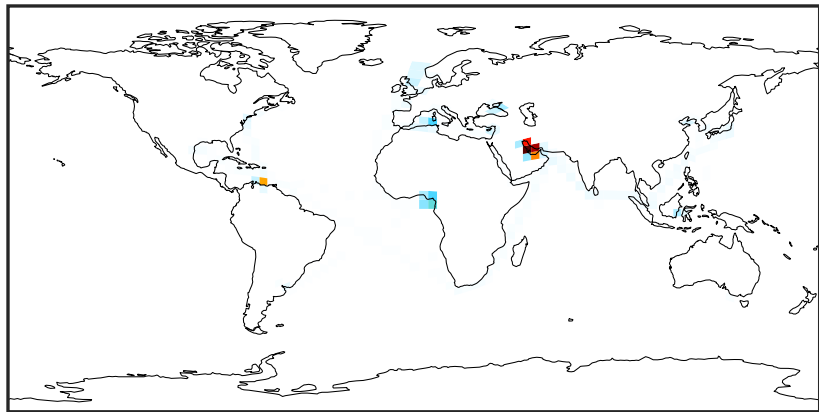

Ref and Dev equal throughout domain
unitless

Ratio (1x1.25)
Dev/Ref, Fixed Range

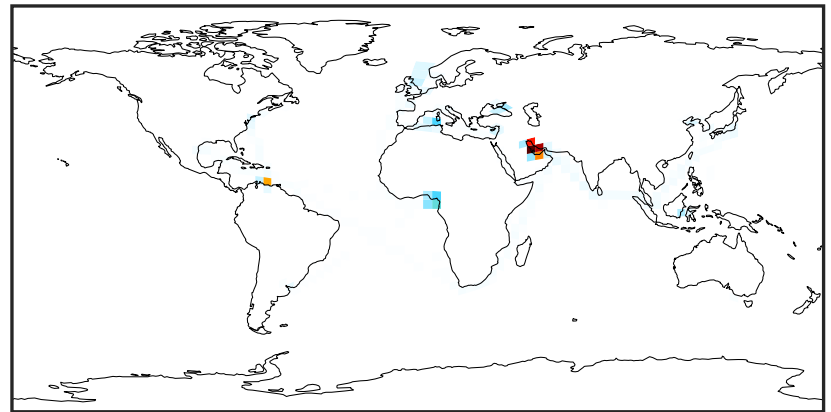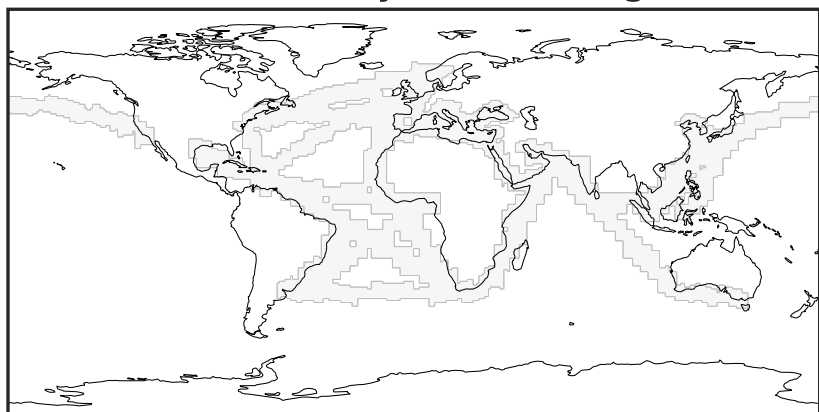Ref and Dev equal throughout domain
unitless

EmisC2H6_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

kg/m2/s

1e−12

GCHP_14.2.0 (Dev)
c24

kg/m2/s

1e−12

Difference (1x1.25)
Dev - Ref, Dynamic Range

Zero throughout domain
kg/m2/s

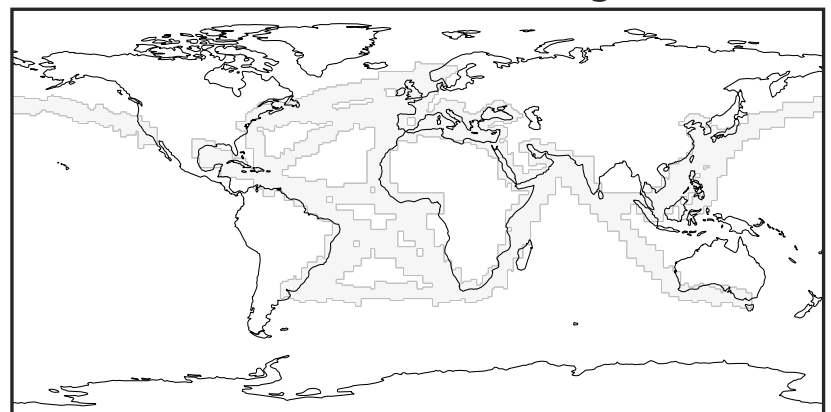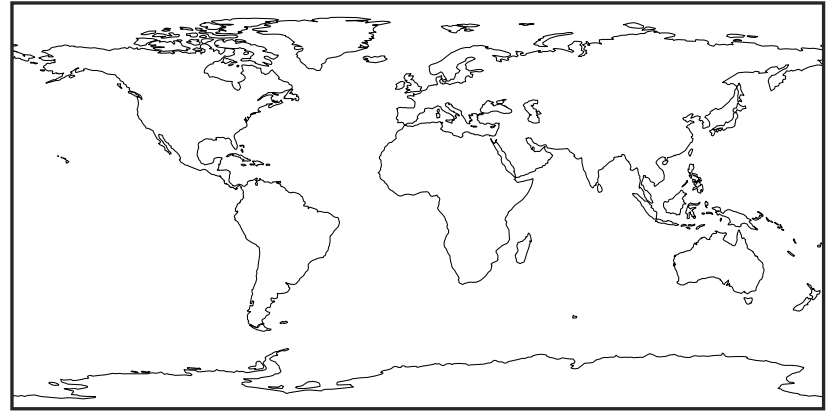## Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]
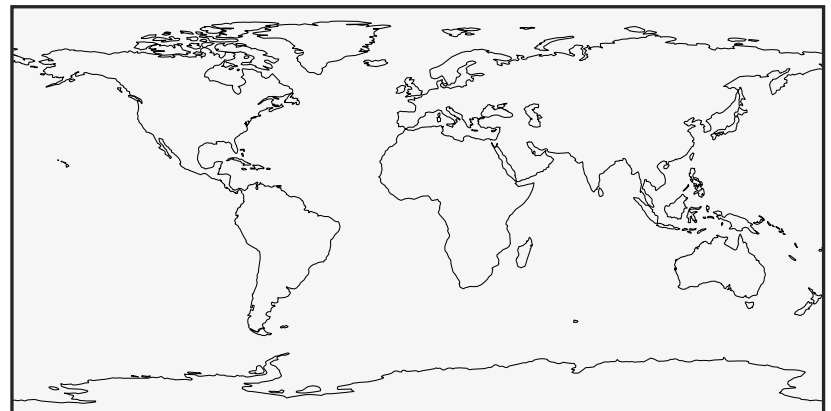
Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range
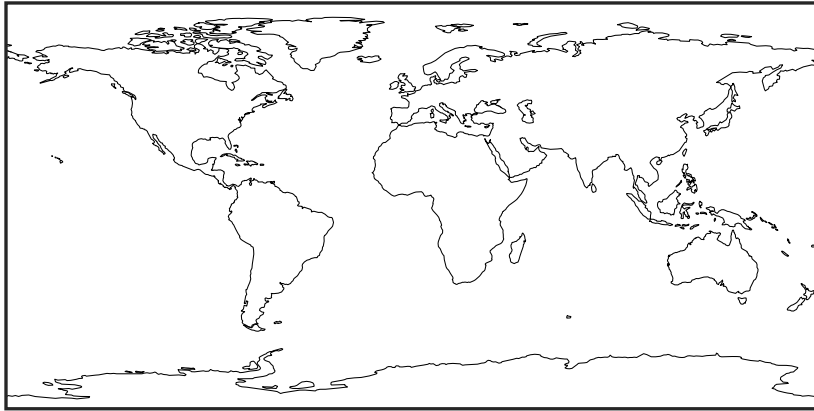

Ref and Dev equal throughout domain
unitless

Ratio (1x1.25)
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

EmisC3H8_Ship (Apr2019)

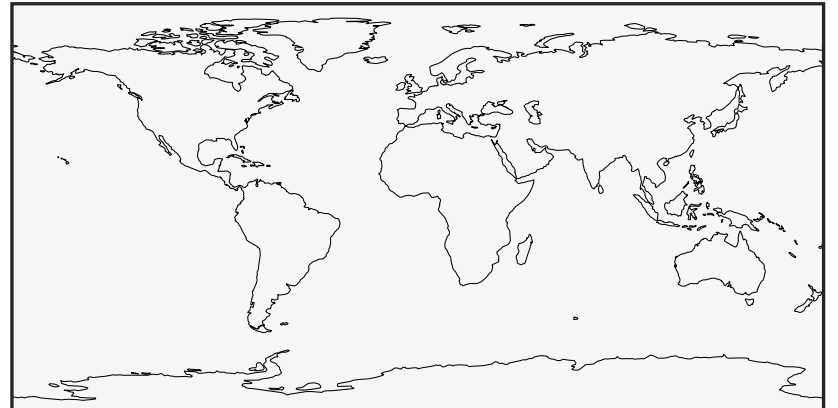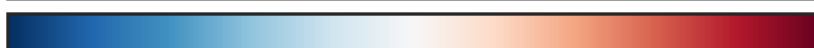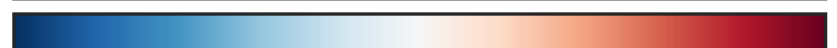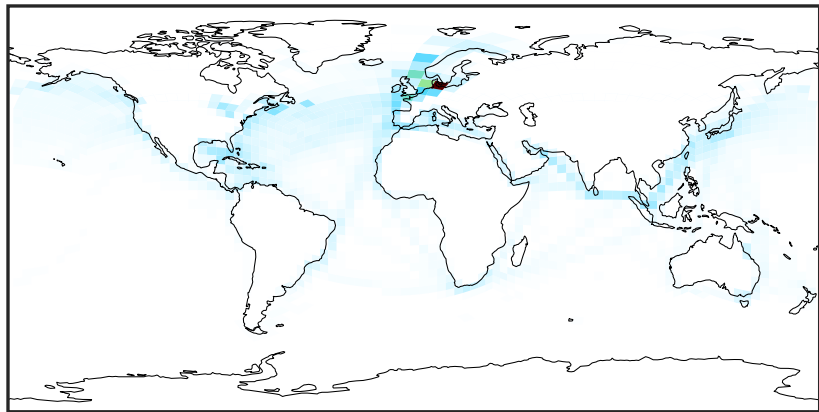# EmisCH2O_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

GCHP_14.2.0 (Dev)
c24

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s
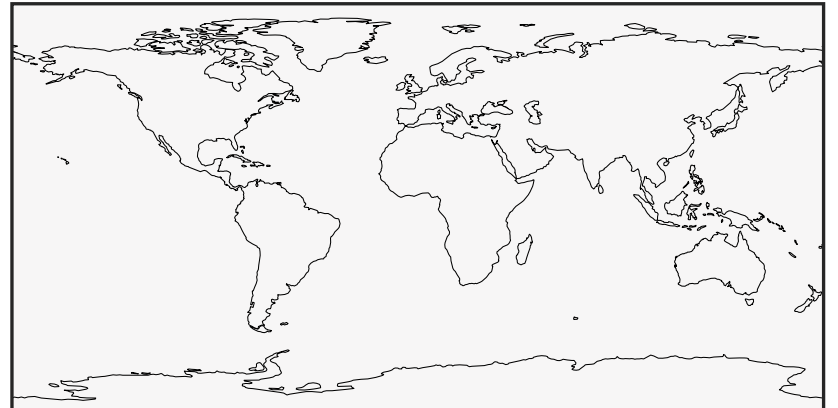
Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Undefined throughout domain
unitless

Undefined throughout domain
unitless

EmisCO2_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24
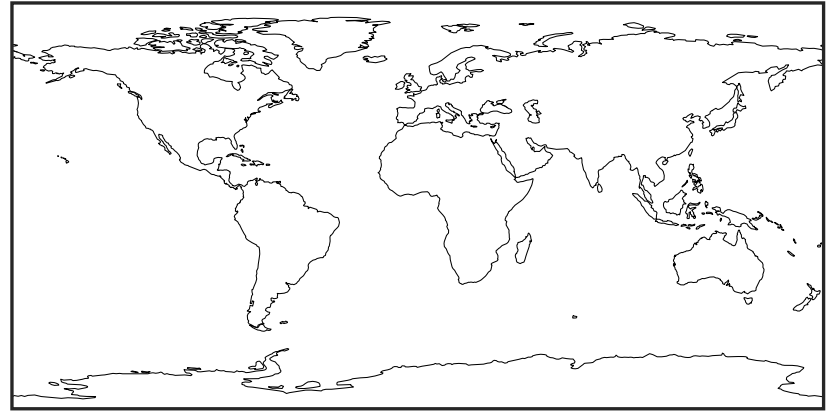
Zero throughout domain
kg/m2/s

GCHP_14.2.0 (Dev)
c24

Zero throughout domain
kg/m2/s

Difference (1x1.25)
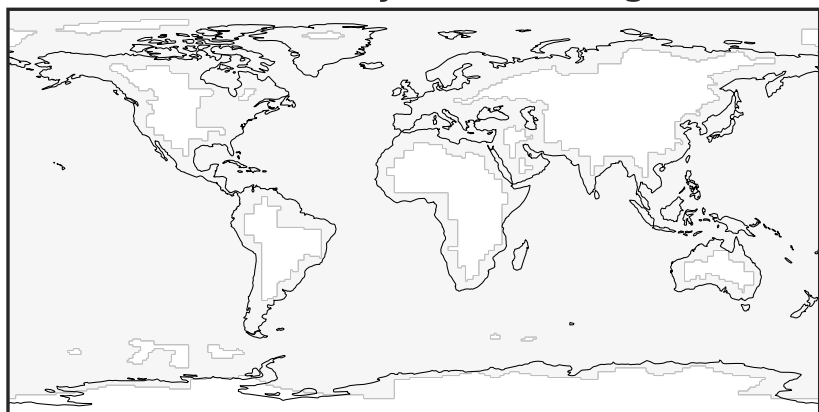Dev - Ref, Dynamic Range
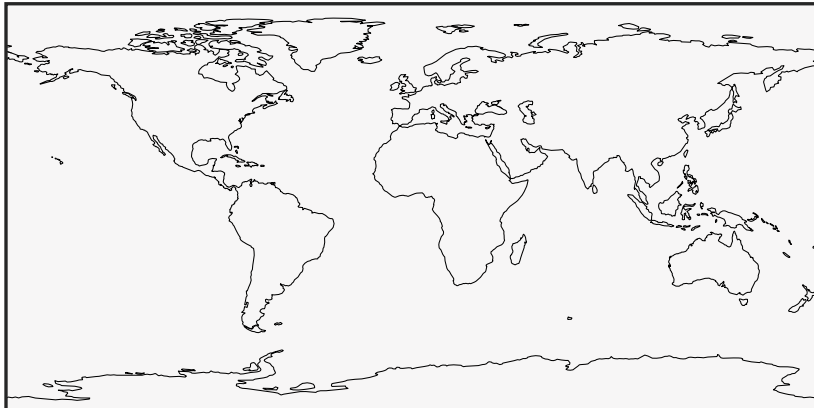
Zero throughout domain
kg/m2/s
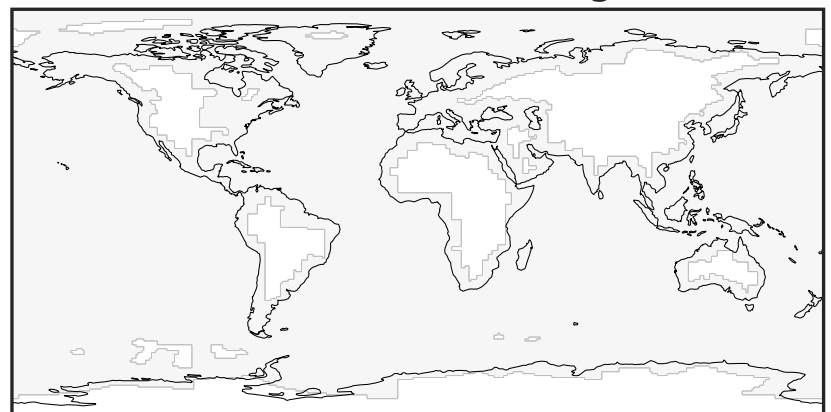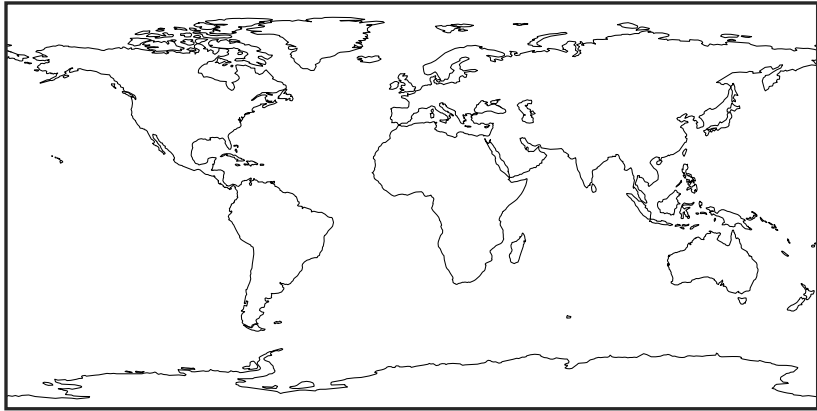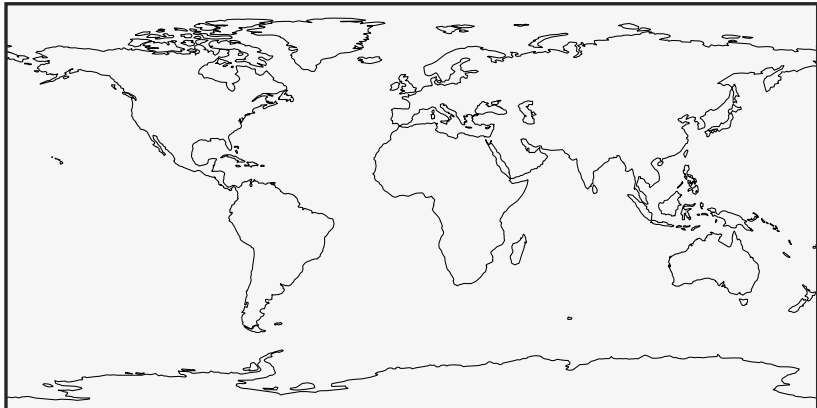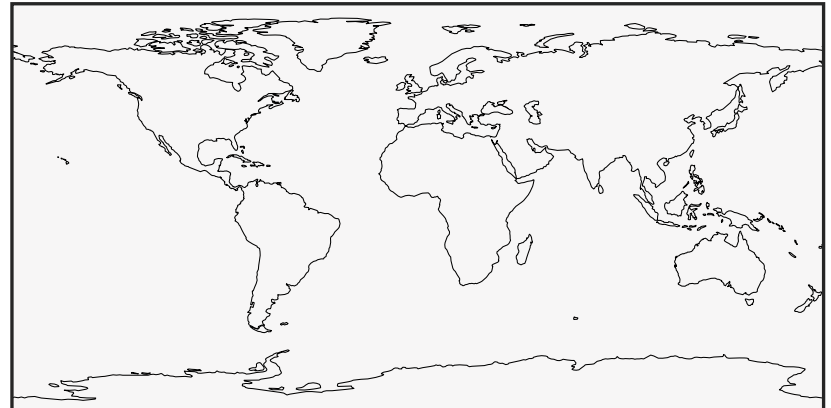
Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
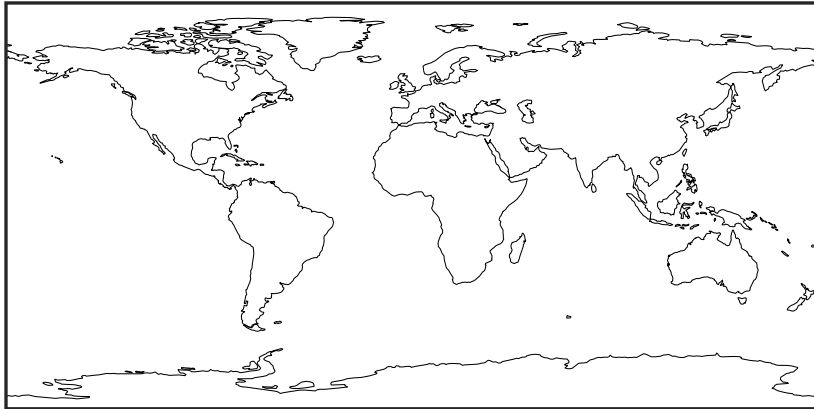Dev/Ref, Dynamic Range

Undefined throughout domain
unitless

Ratio (1x1.25)
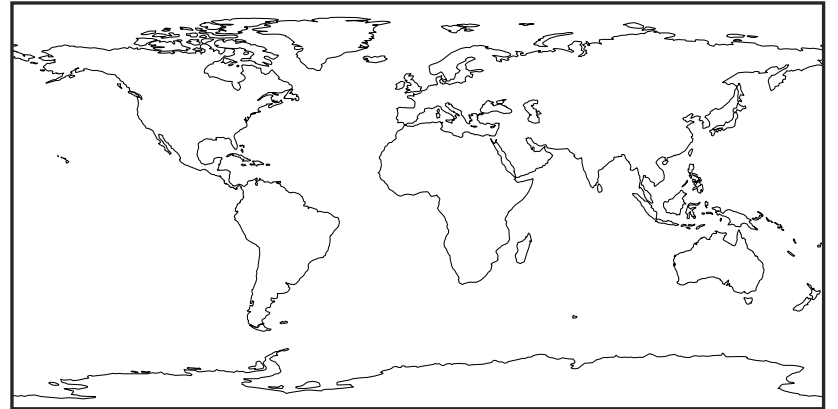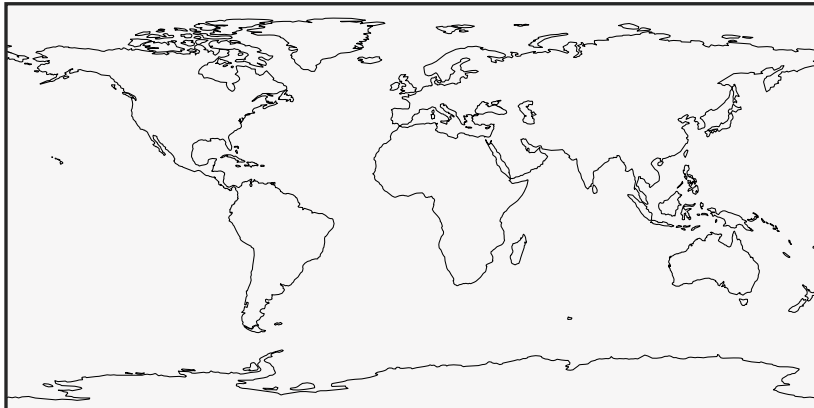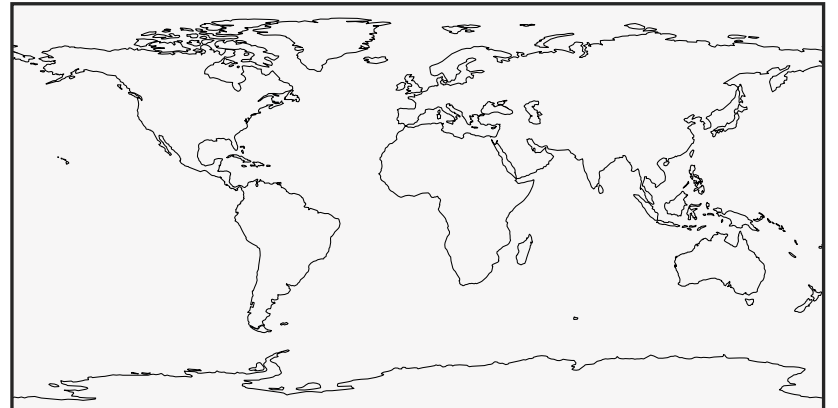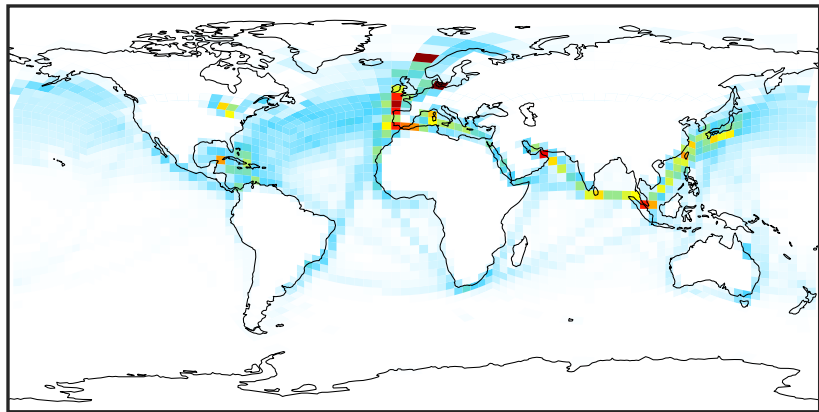Dev/Ref, Fixed Range
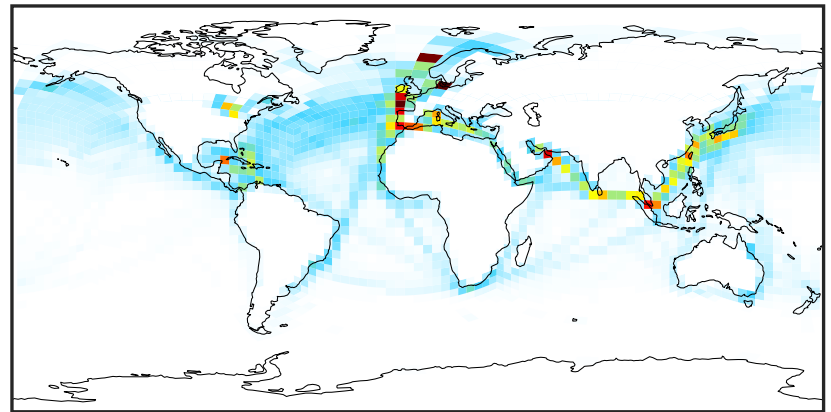
Undefined throughout domain
unitless

EmisCO_Ship (Apr2019)

EmisEOH_Ship (Apr2019)
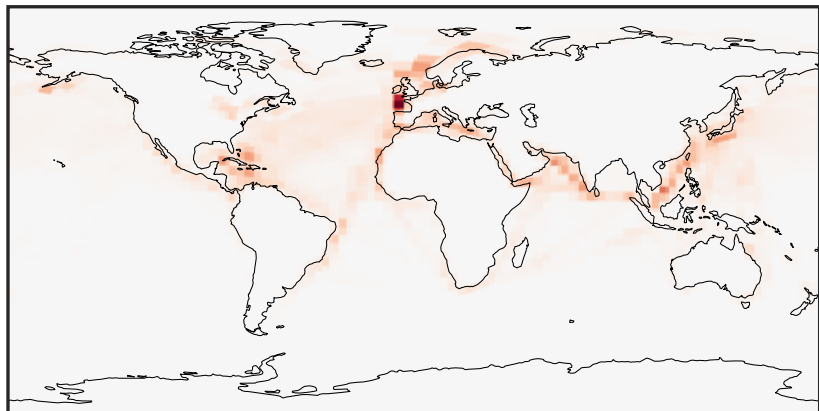
GCHP_14.0.0 (Ref)
c24

Zero throughout domain
kg/m2/s

GCHP_14.2.0 (Dev)
c24

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Zero throughout domain
kg/m2/s

Difference (1x1.25)
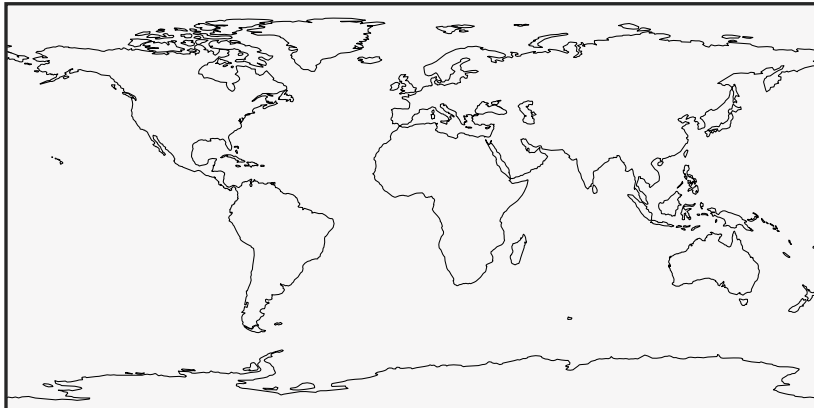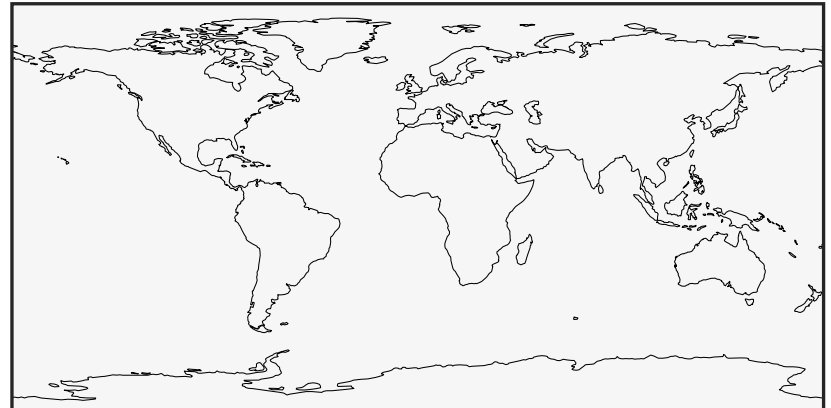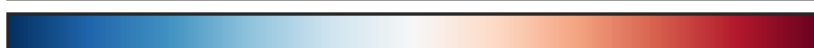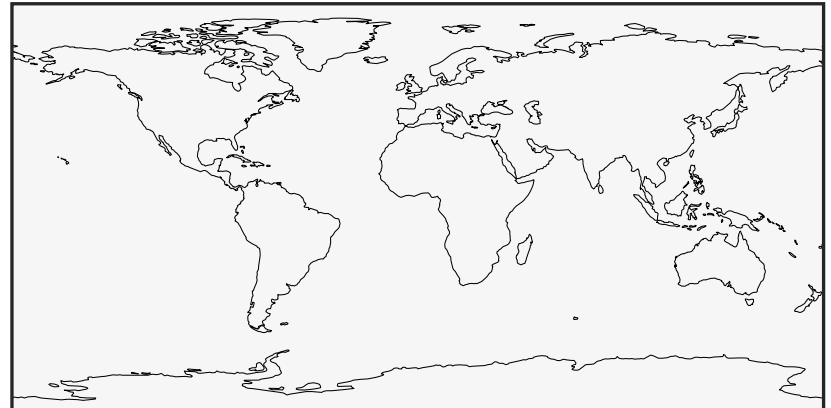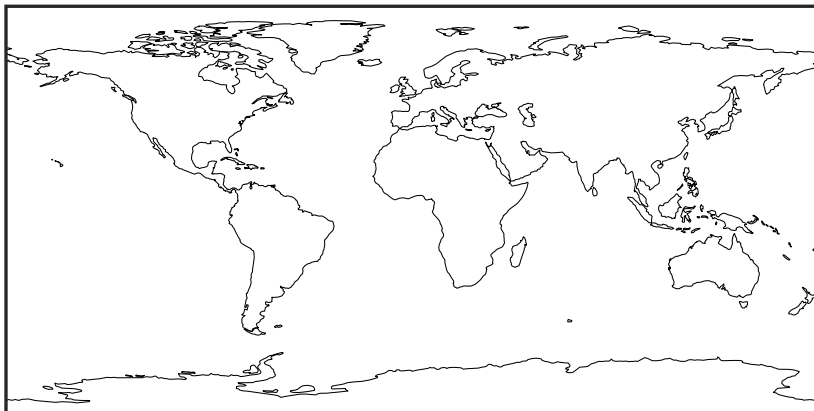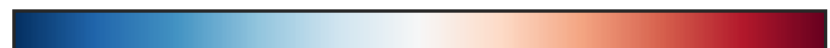### Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Undefined throughout domain
unitless

Ratio (1x1.25)
Dev/Ref, Fixed Range

Undefined throughout domain
unitless

EmisHCOOH_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

GCHP_14.2.0 (Dev)
c24

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

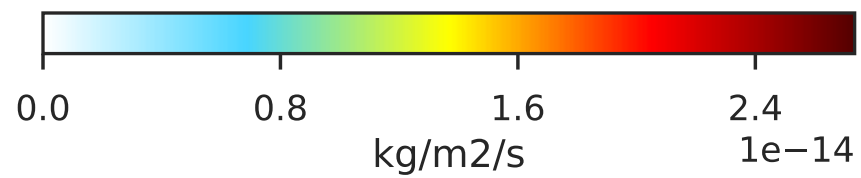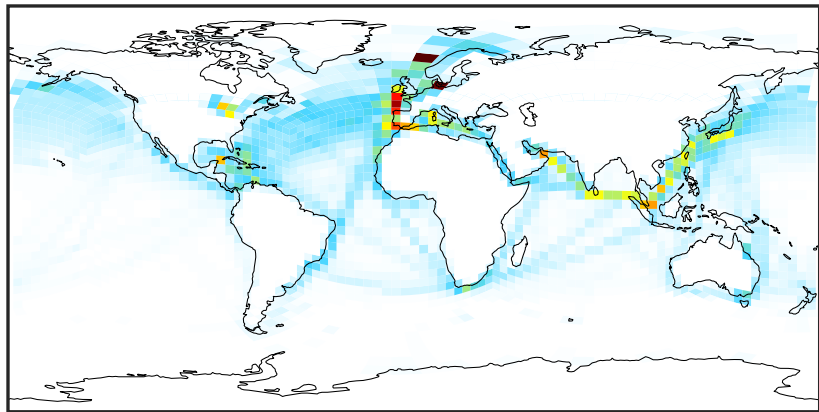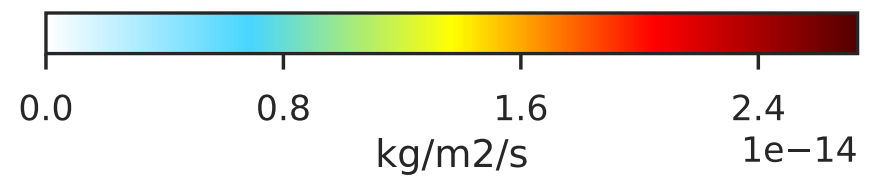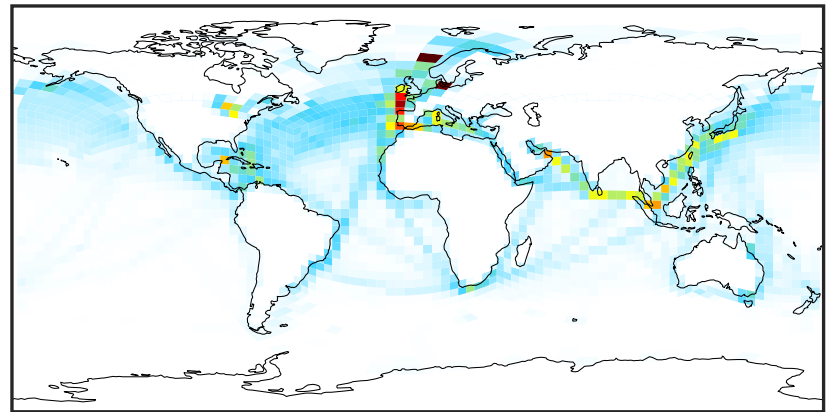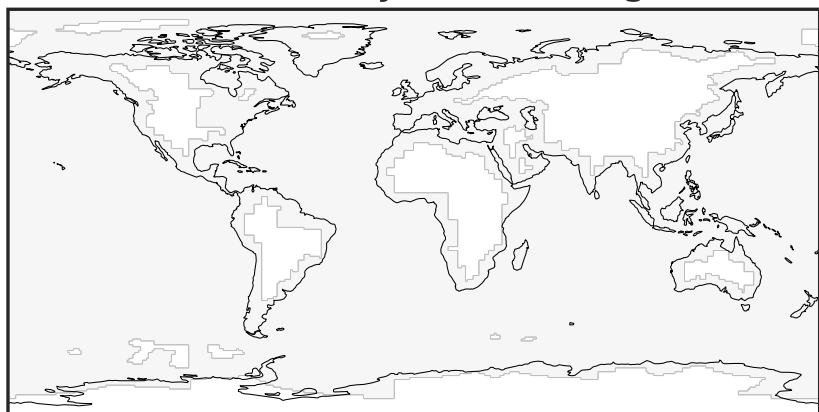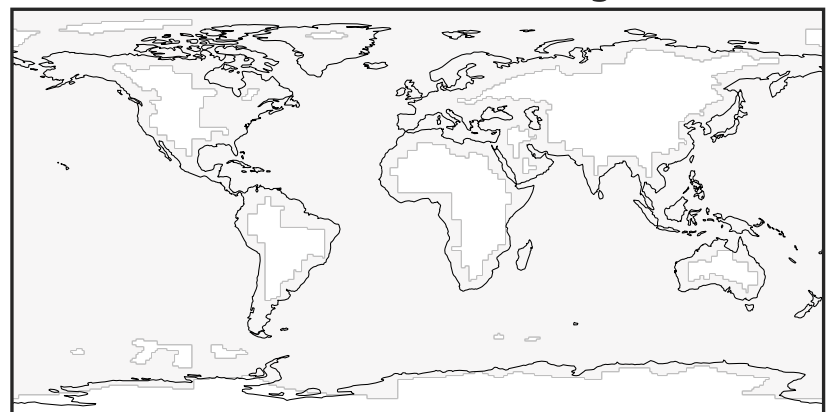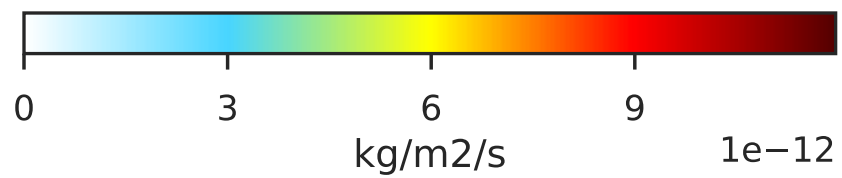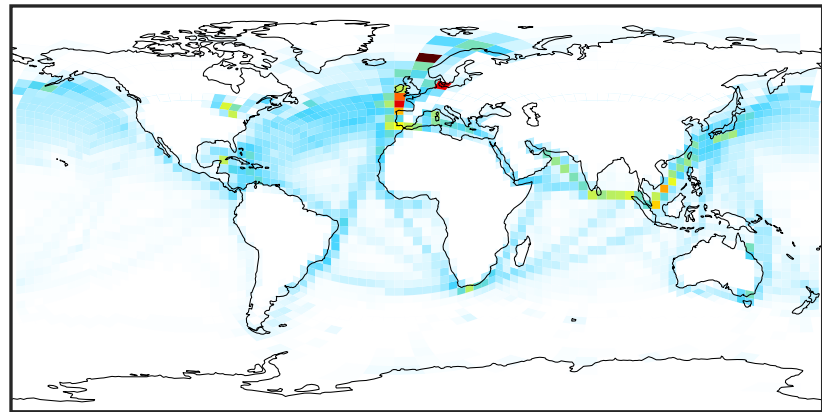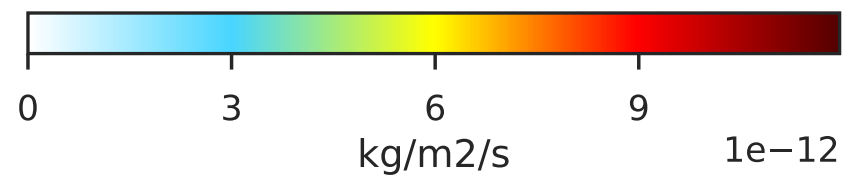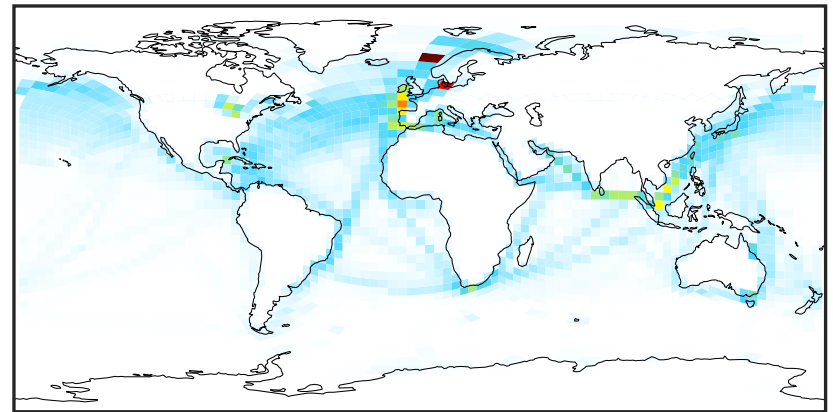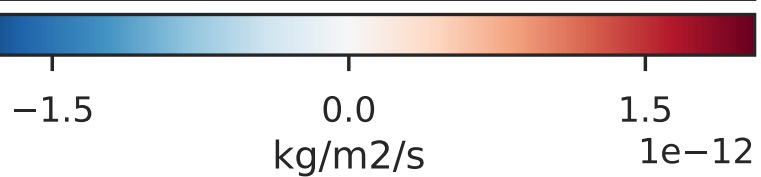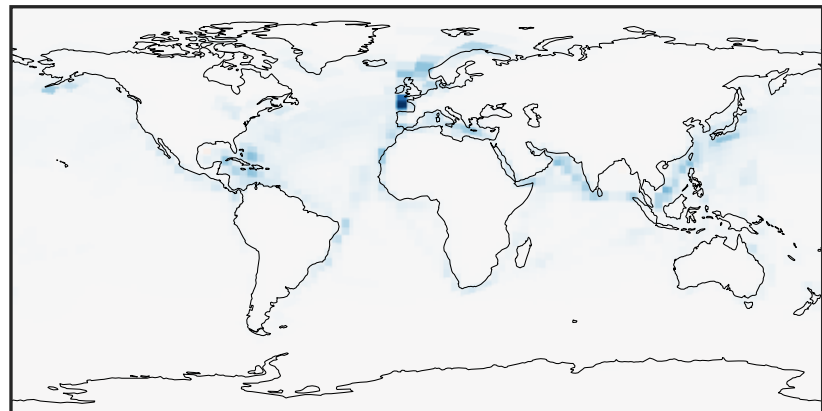Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Undefined throughout domain
unitless

Undefined throughout domain
unitless

EmisHNO3_Ship (Apr2019)

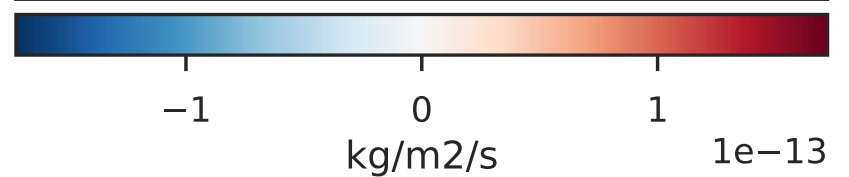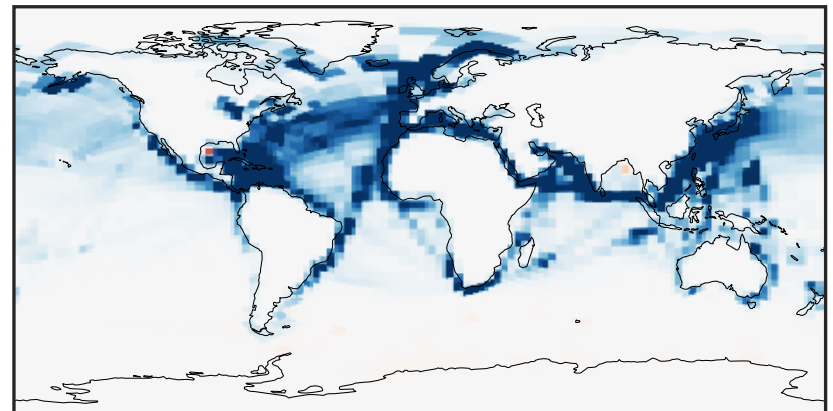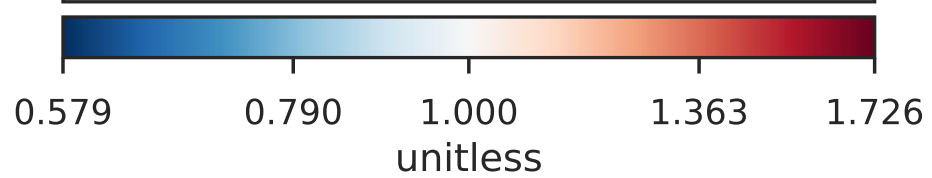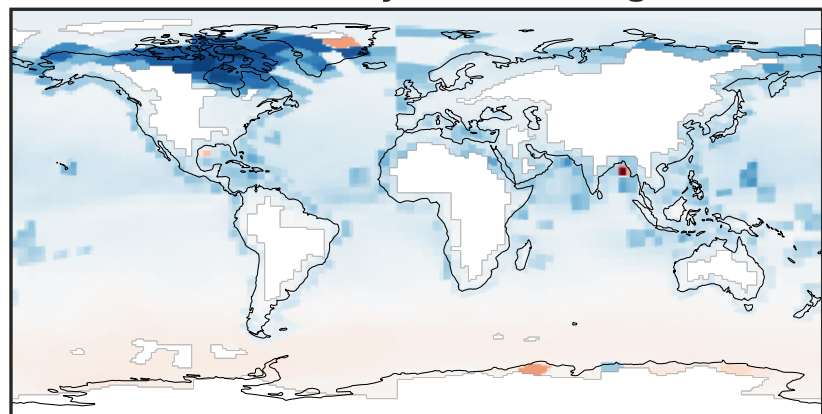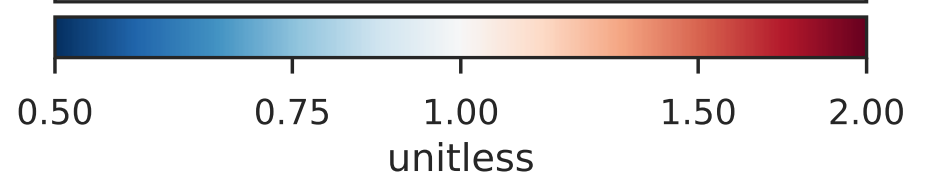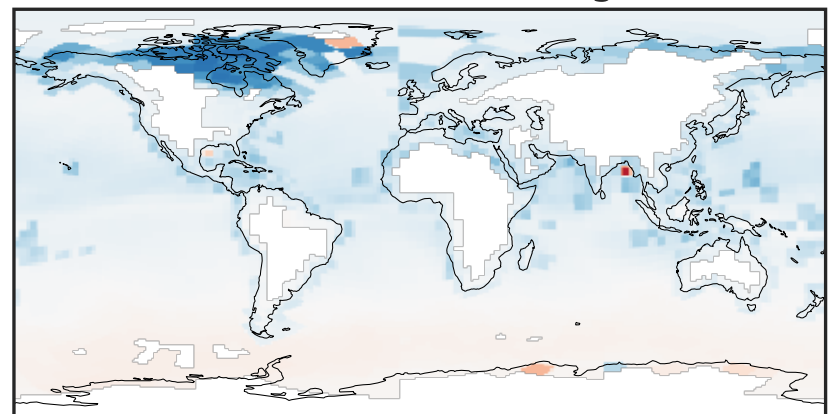| GCHP_14.0.0 (Ref) | GCHP_14.2.0 (Dev) |
| c24 | c24 |

Difference (1x1.25)
Dev - Ref, Dynamic Range
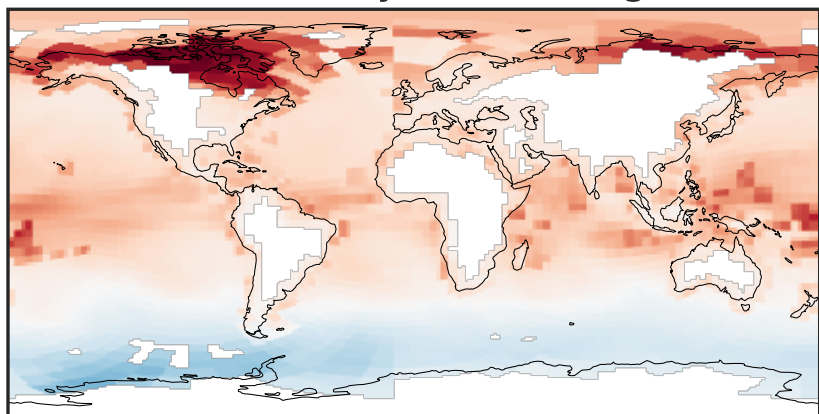
Difference (1x1.25)
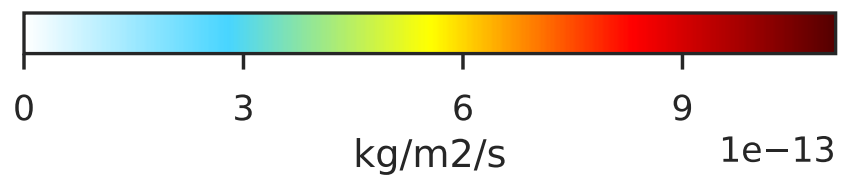Dev - Ref, Restricted Range [5%,95%]

Ratio (1x1.25)
Dev/Ref, Dynamic Range
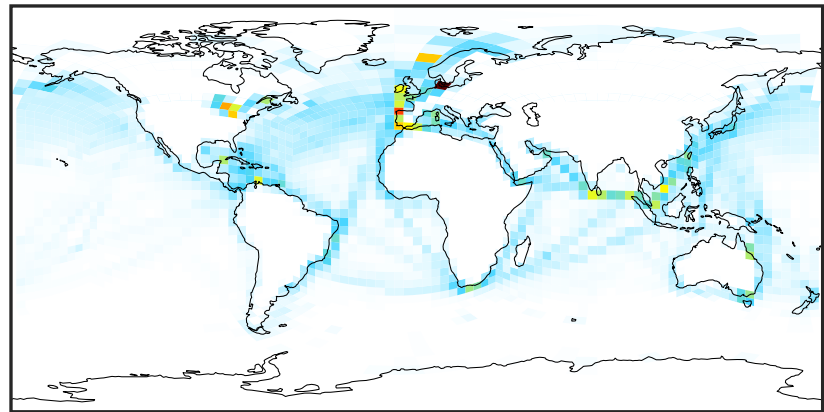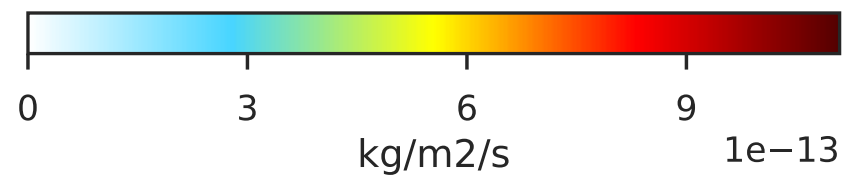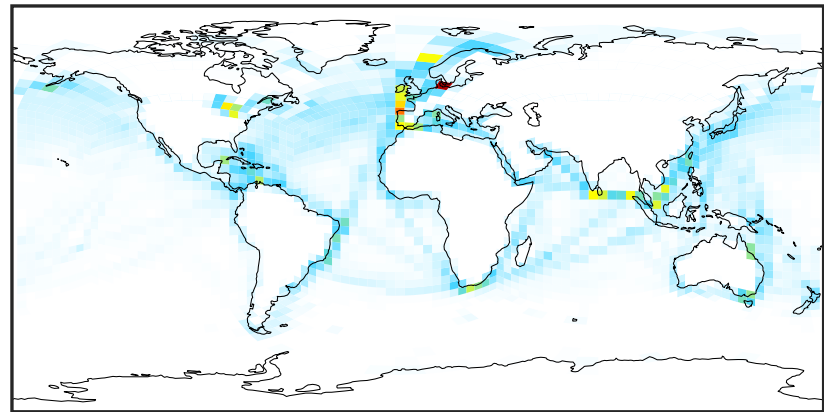
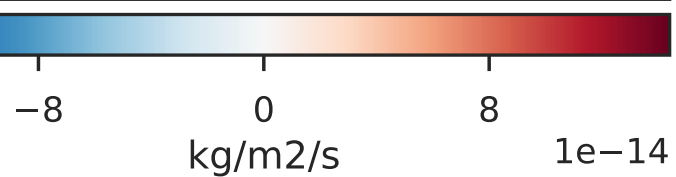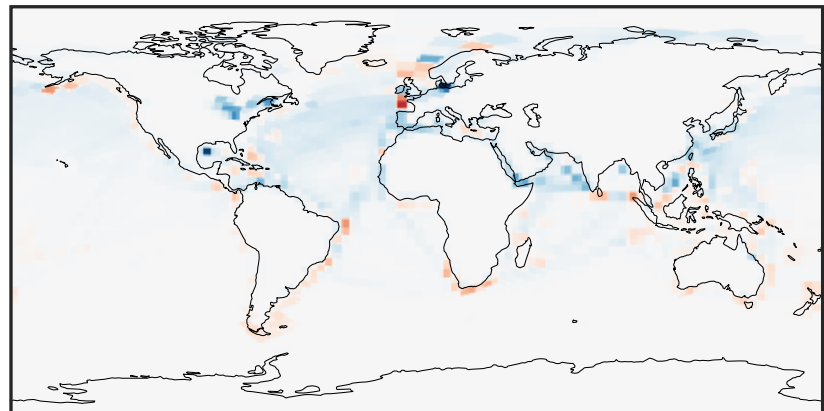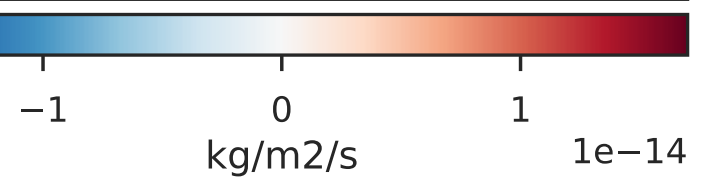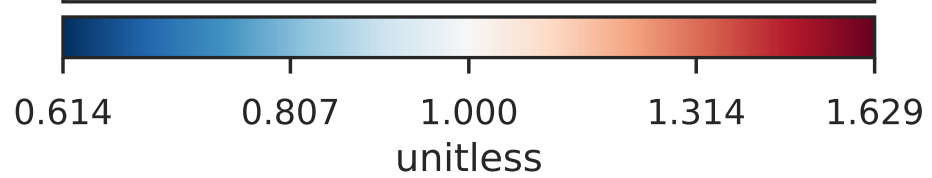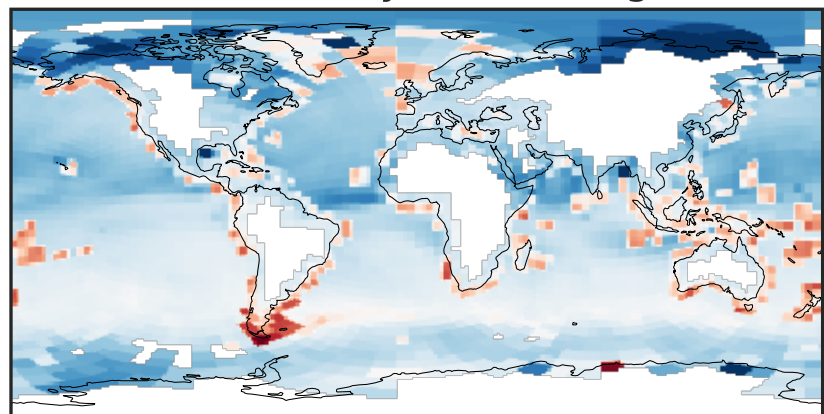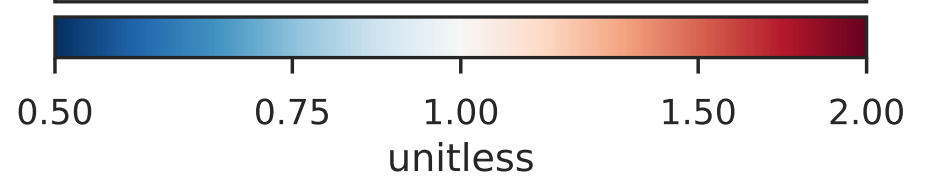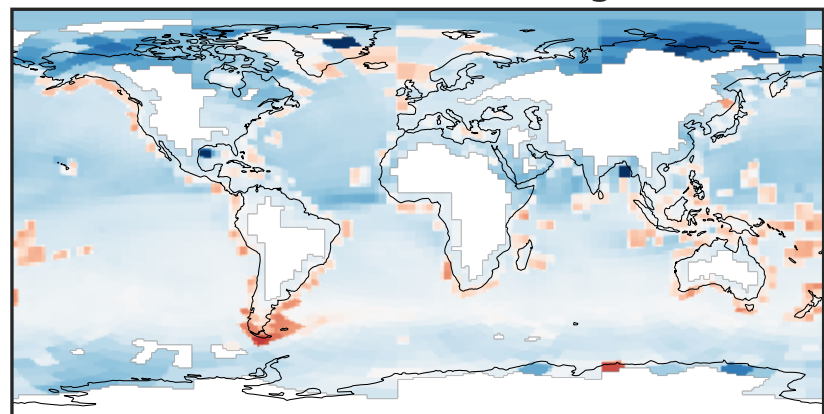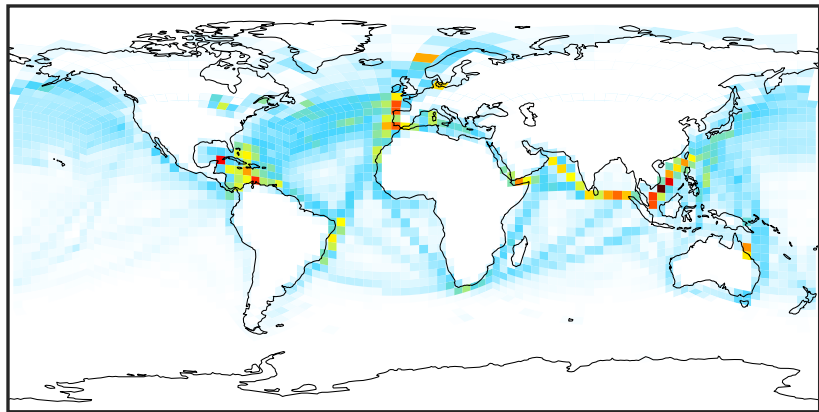Ratio (1x1.25)
Dev/Ref, Fixed Range
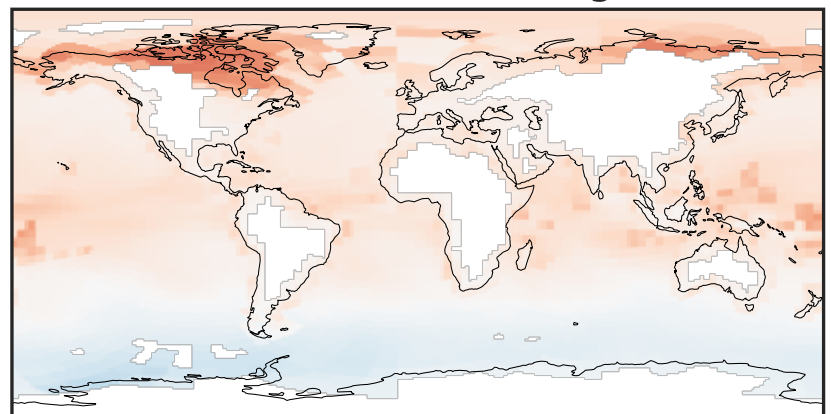
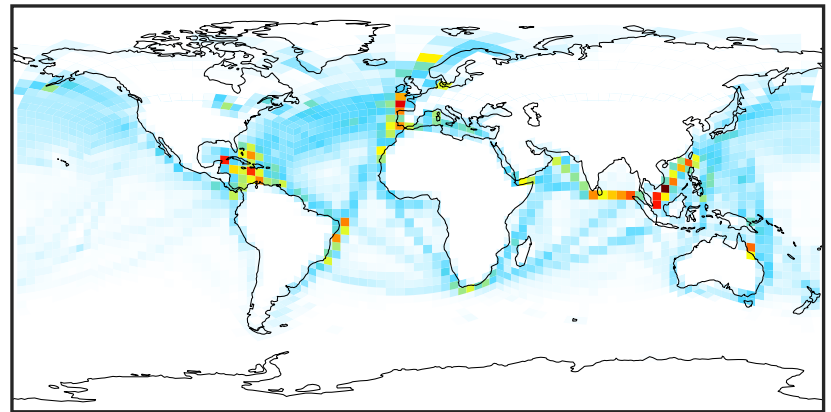# EmisMEK_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24
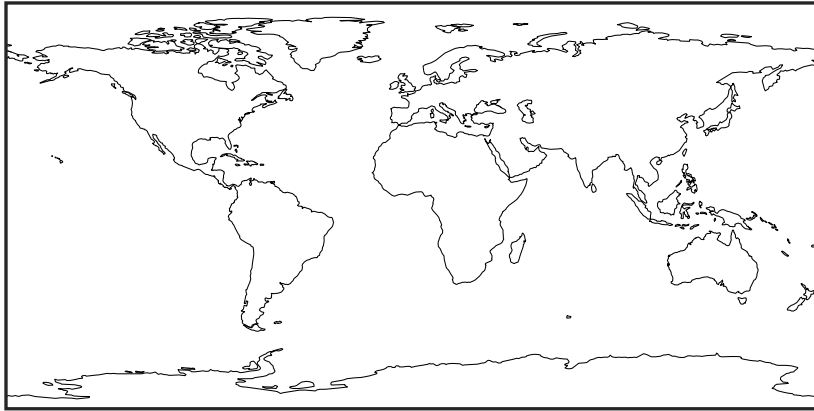
Zero throughout domain
kg/m2/s

GCHP_14.2.0 (Dev)
c24

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Undefined throughout domain
unitless

Ratio (1x1.25)
Dev/Ref, Fixed Range

Undefined throughout domain
unitless

EmisMOH_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

Zero throughout domain
kg/m2/s

GCHP_14.2.0 (Dev)
c24

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Zero throughout domain
kg/m2/s

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Undefined throughout domain
unitless

Ratio (1x1.25)
Dev/Ref, Fixed Range

Undefined throughout domain
unitless

EmisNH3_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

GCHP_14.2.0 (Dev)
c24

kg/m2/s

1e−14

kg/m2/s

1e−14

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
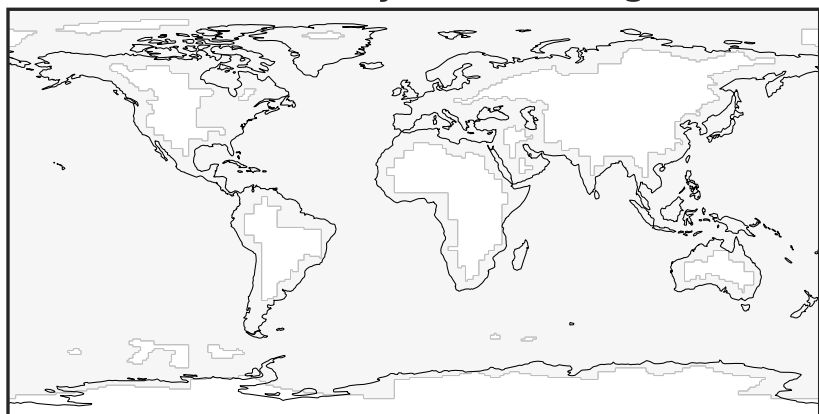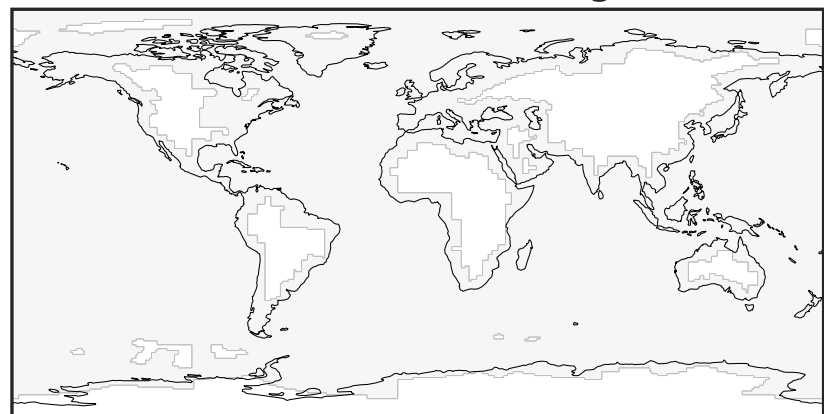kg/m2/s

Zero throughout domain
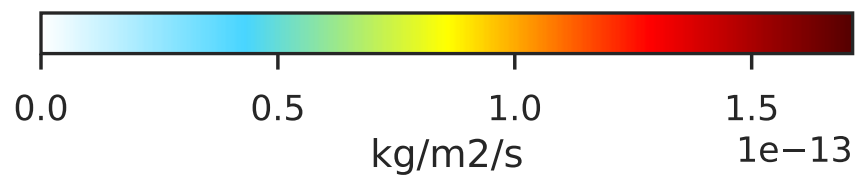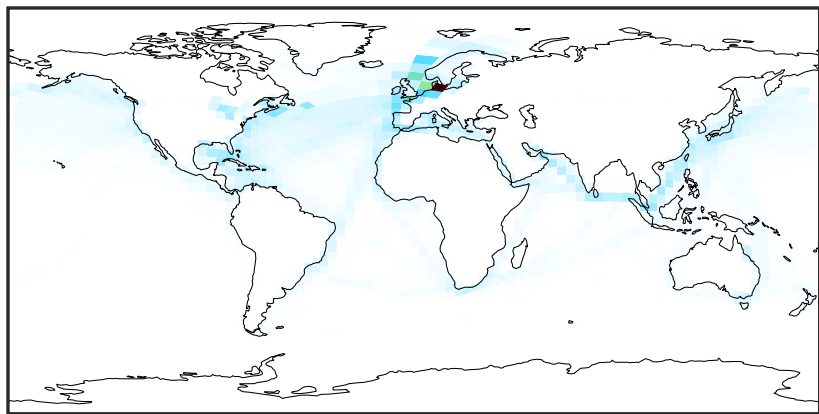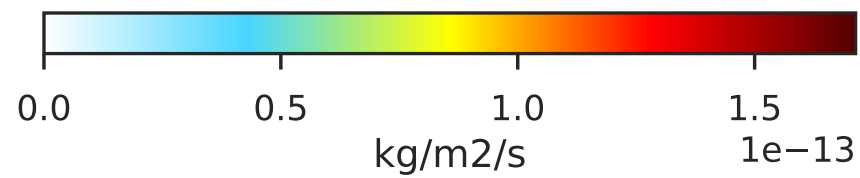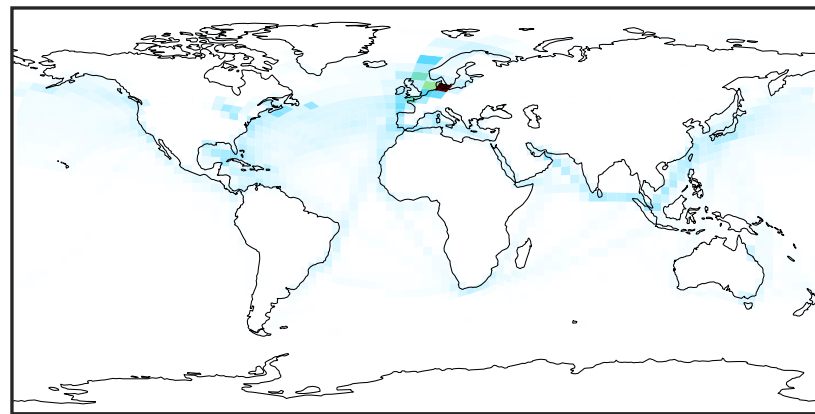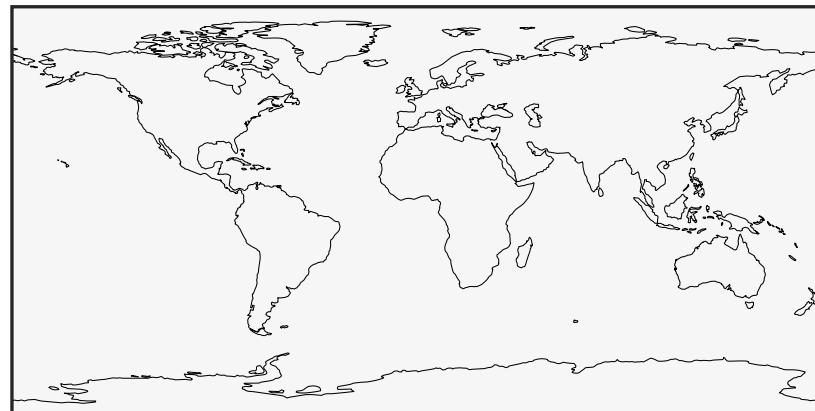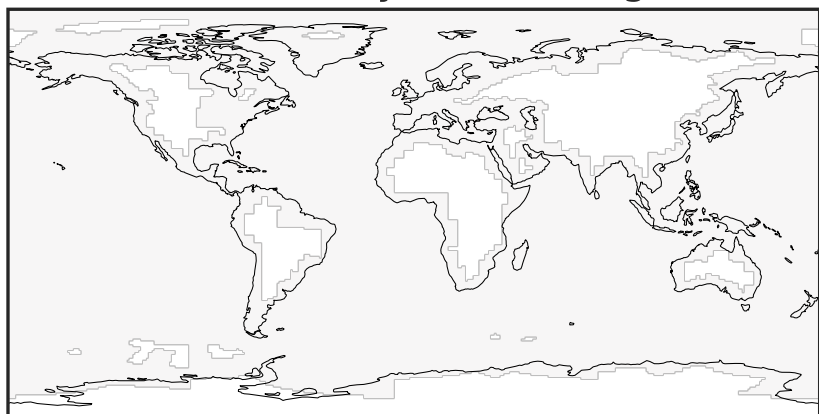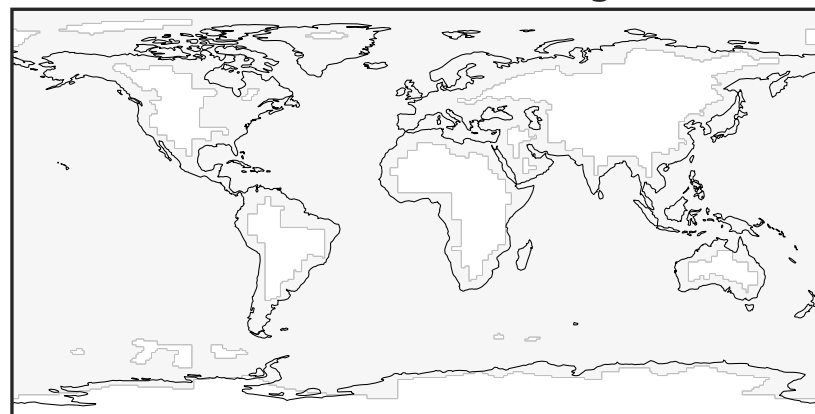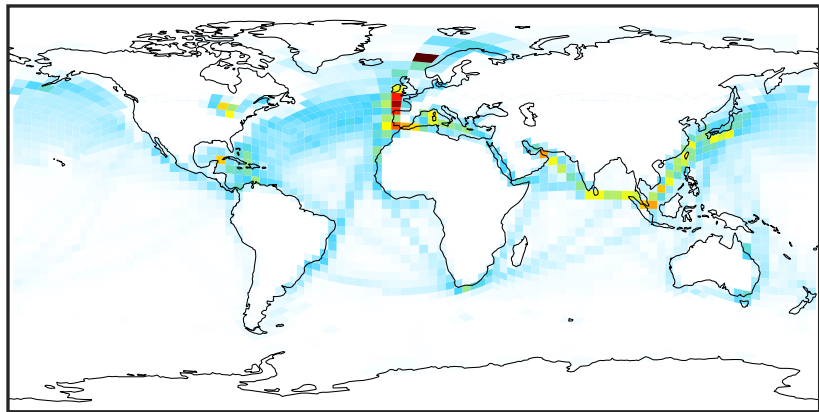kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
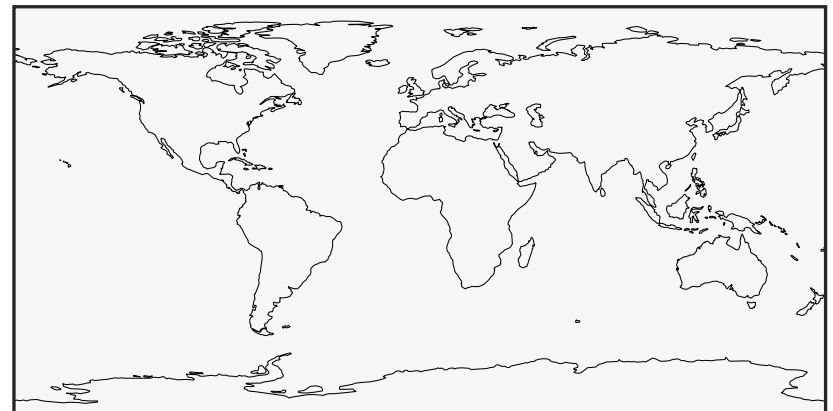Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

EmisNO2_Ship (Apr2019)

EmisNO_Ship (Apr2019)

EmisO3_Ship (Apr2019)

EmisOCPI_Ship (Apr2019)

EmisOCPO_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24

GCHP_14.2.0 (Dev)
c24

kg/m2/s

kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range
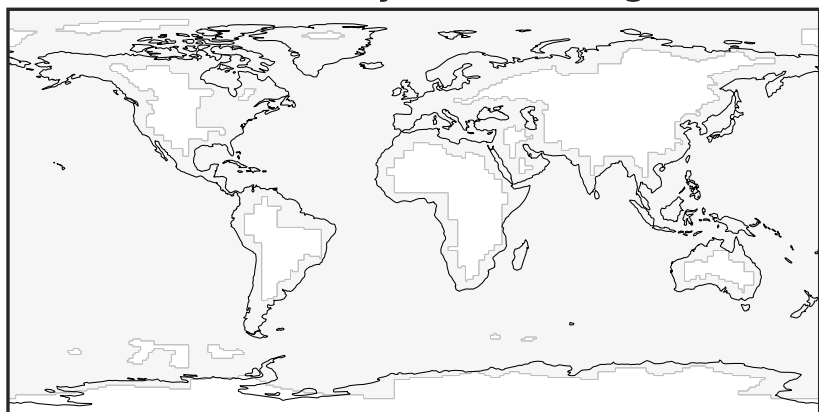
Ratio (1x1.25)
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

EmispFe_Ship (Apr2019)

EmisPRPE_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24
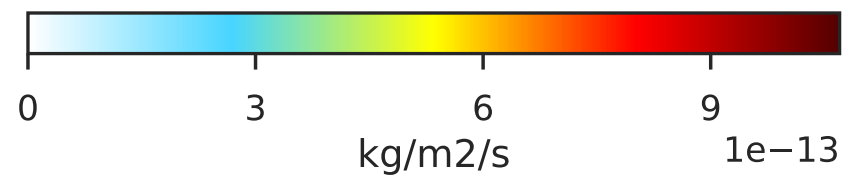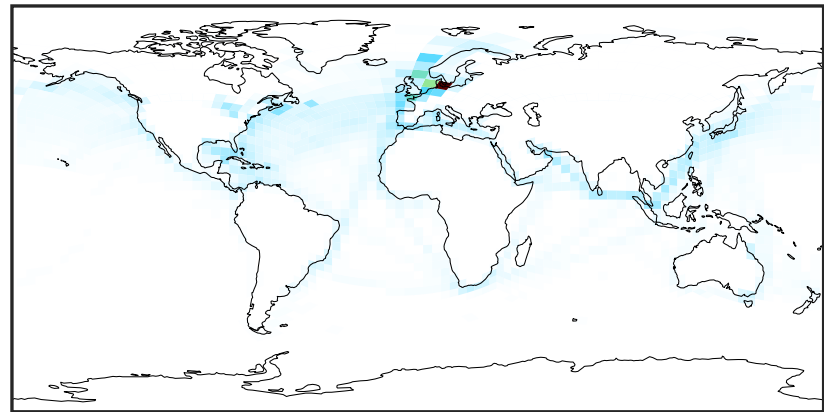
GCHP_14.2.0 (Dev)
c24

kg/m2/s
1e−13

kg/m2/s
1e−13

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s
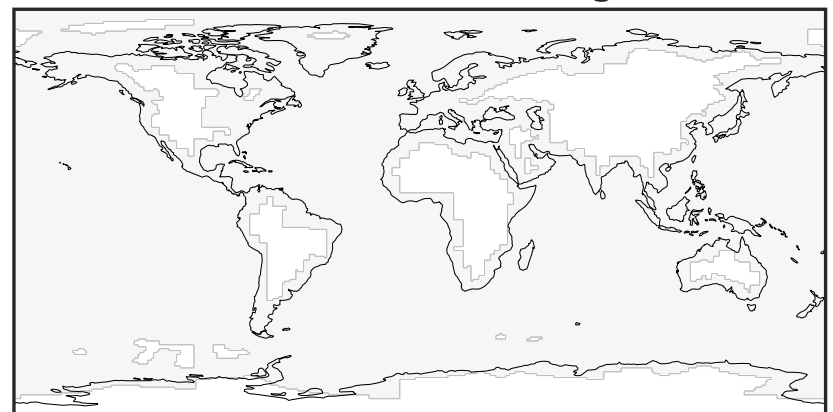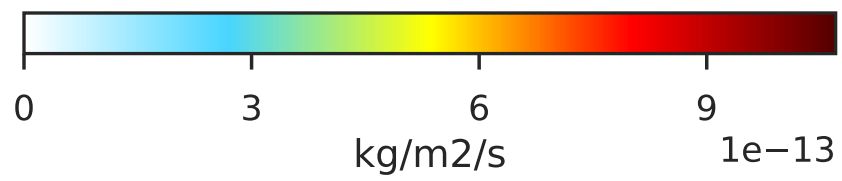
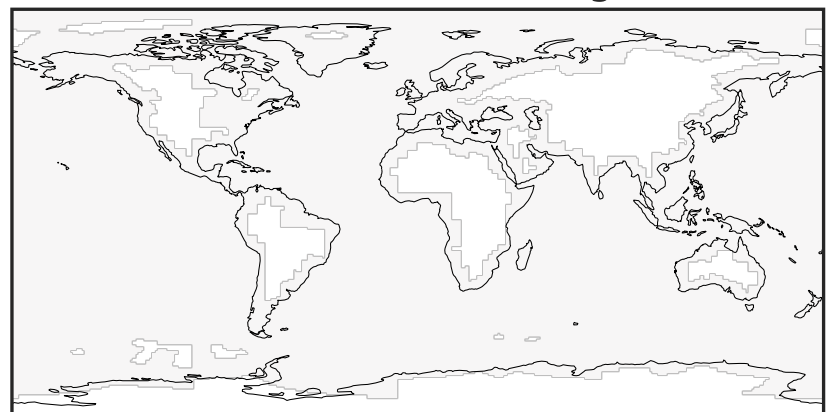Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
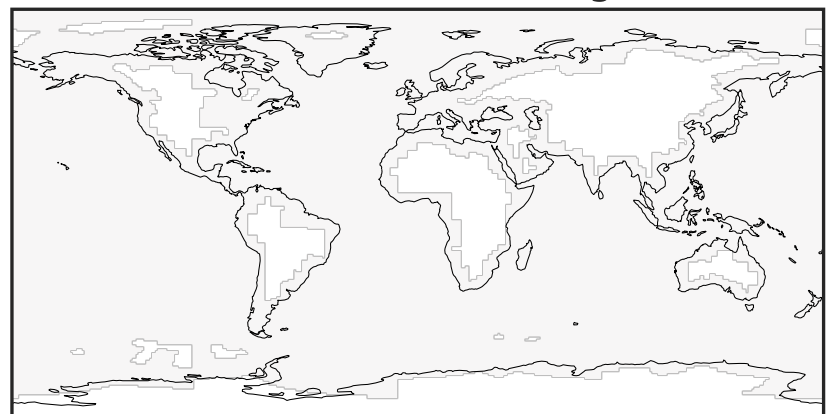unitless

Ref and Dev equal throughout domain
unitless

EmisSO2_Ship (Apr2019)

EmisSO4_Ship (Apr2019)

EmisSOAP_Ship (Apr2019)

GCHP_14.0.0 (Ref)
c24
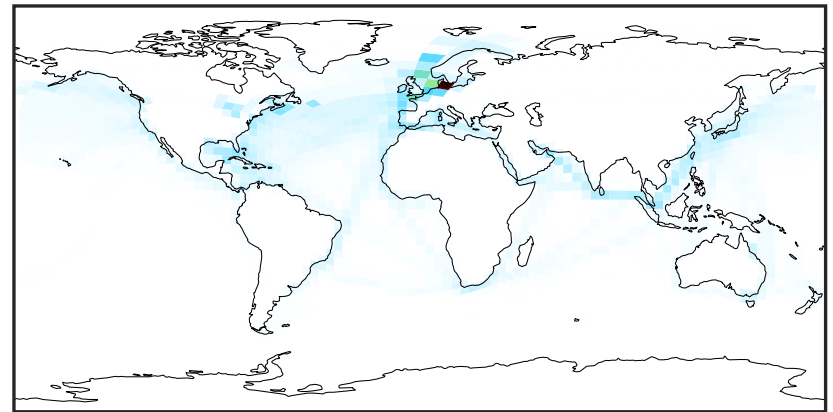
GCHP_14.2.0 (Dev)
c24

kg/m2/s

kg/m2/s

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s
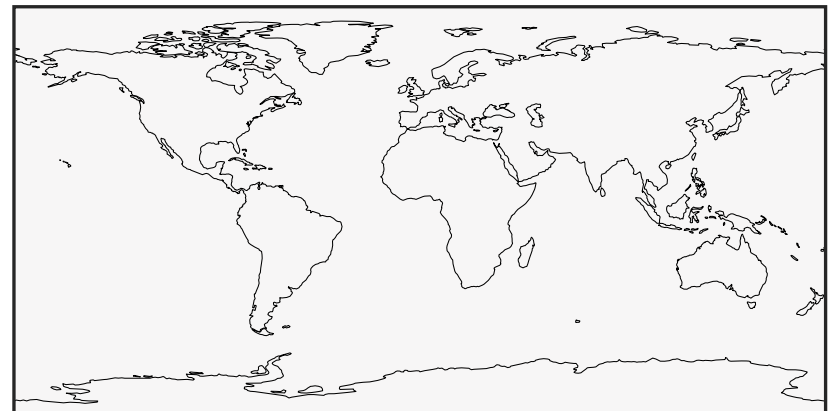
Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

EmisTOLU_Ship (Apr2019)
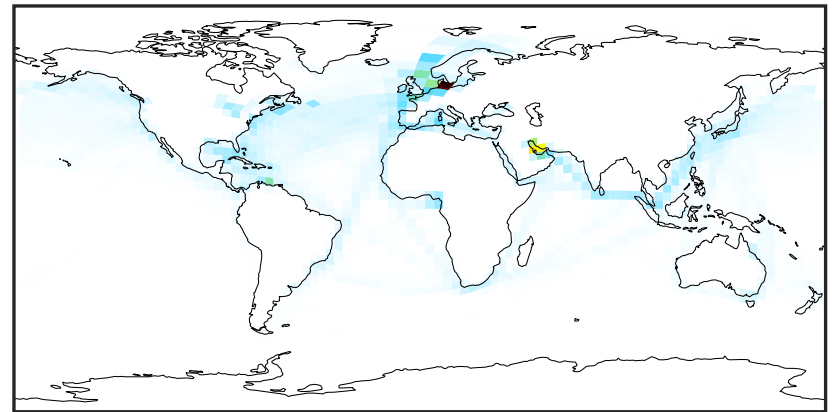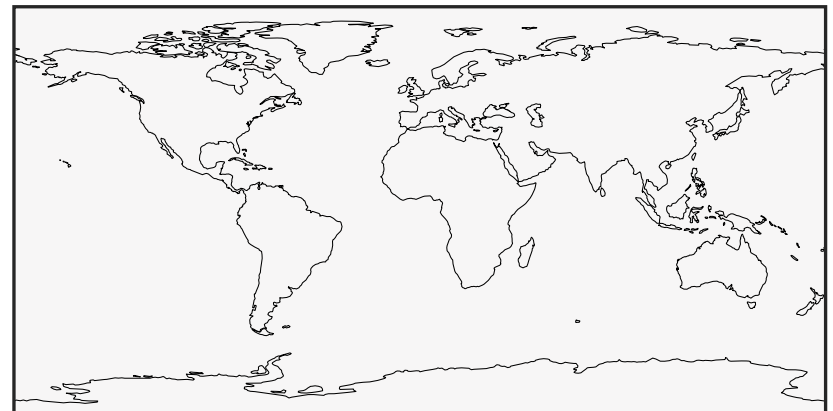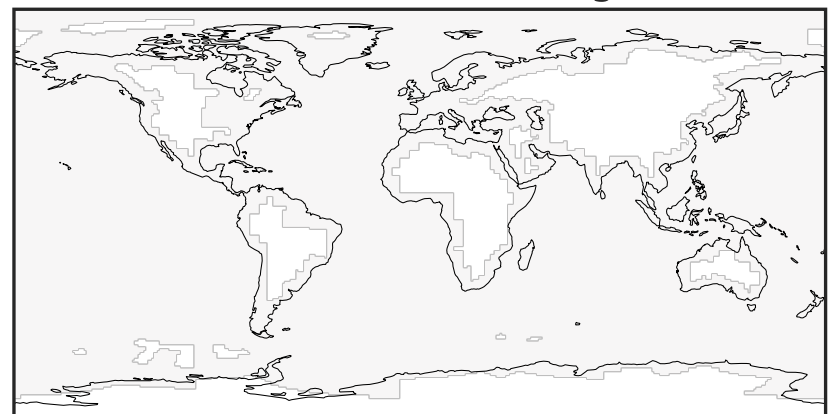
EmisXYLE_Ship (Apr2019)
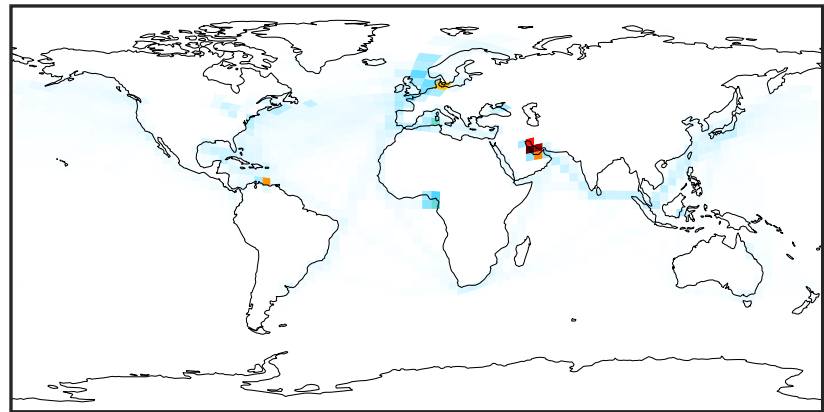
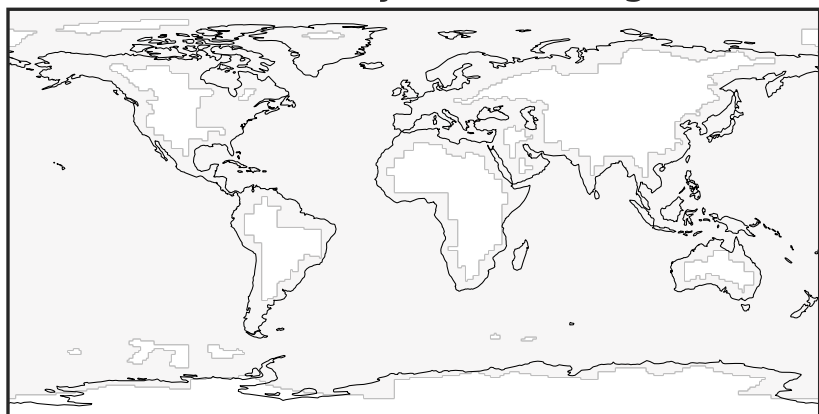| GCHP_14.0.0 (Ref) c24	GCHP_14.2.0 (Dev) c24

Difference (1x1.25)
Dev - Ref, Dynamic Range

Difference (1x1.25)
Dev - Ref, Restricted Range [5%,95%]

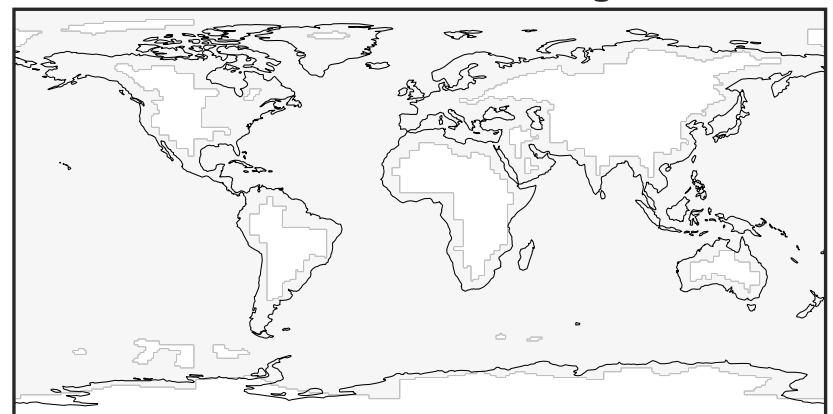Zero throughout domain
kg/m2/s

Ratio (1x1.25)
Dev/Ref, Dynamic Range

Ratio (1x1.25)
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
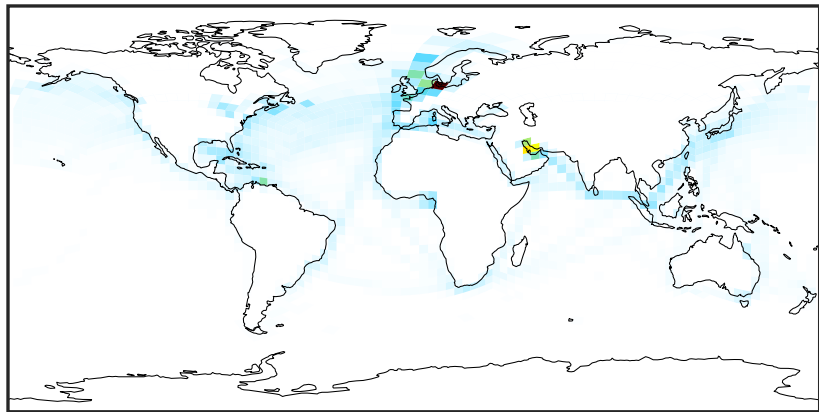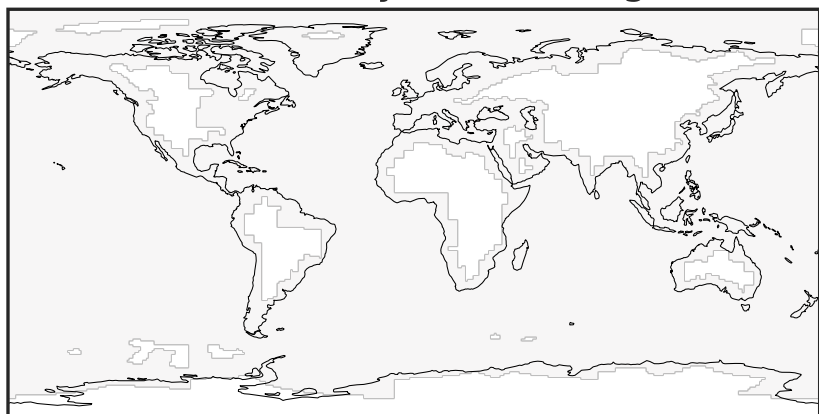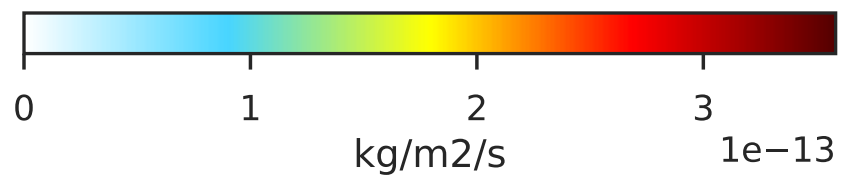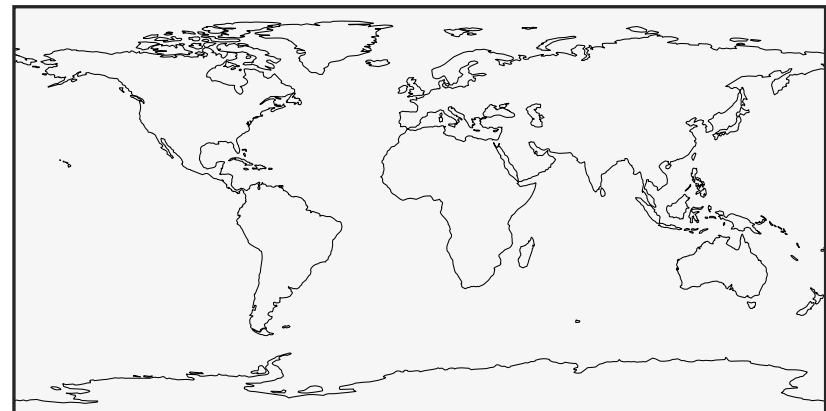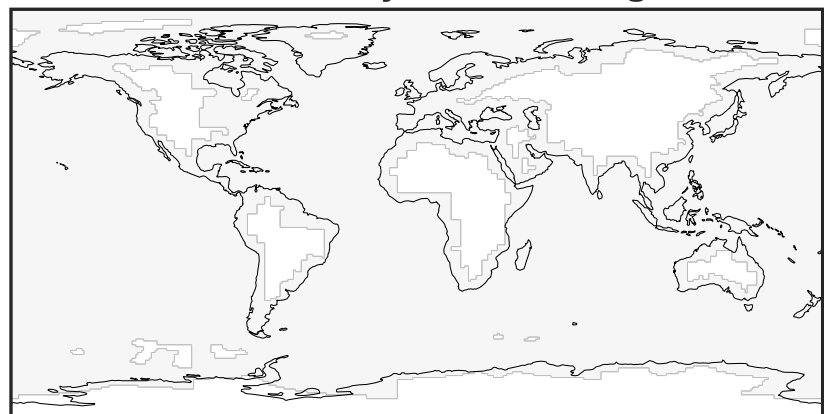unitless