

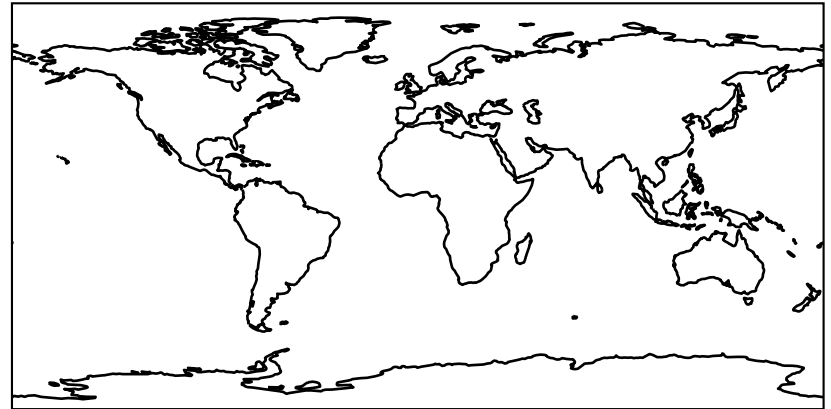
# EmisALD2\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



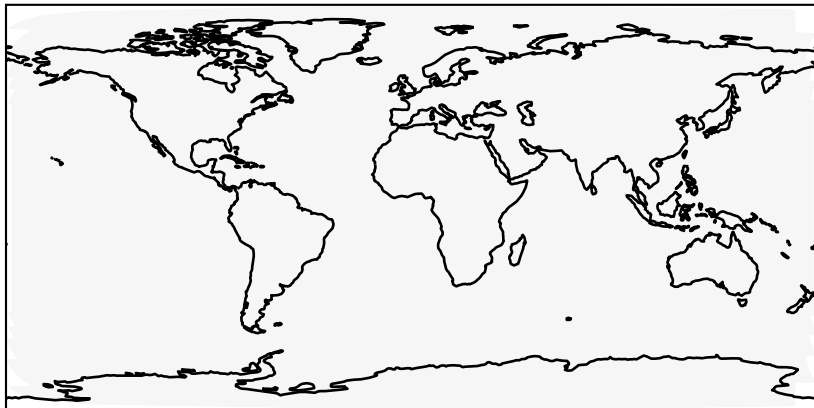
Zero throughout domain  
kg/m2/s

GCHP\_13.0.0-rc.0 (Dev)  
c48



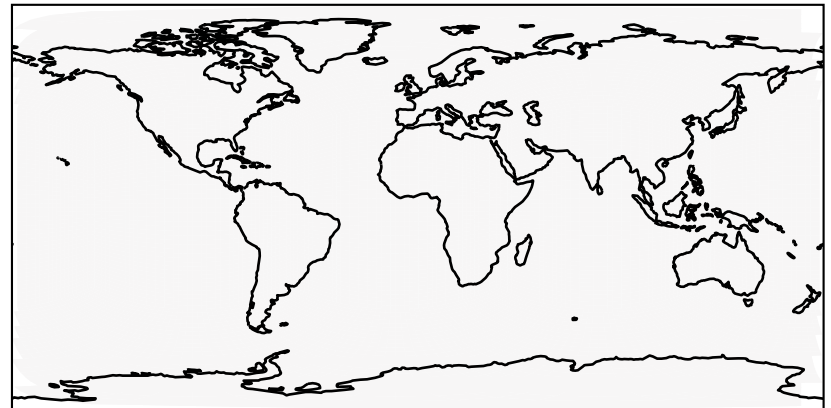
Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Dynamic Range



Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Restricted Range [5%,95%]



Zero throughout domain  
kg/m2/s

Ratio  
Dev/Ref, Dynamic Range



Undefined throughout domain  
unitless

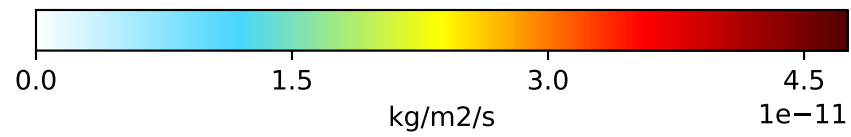
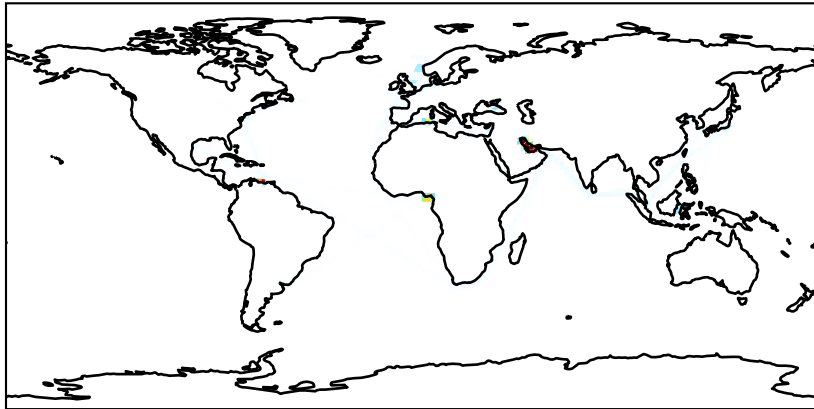
Ratio  
Dev/Ref, Fixed Range



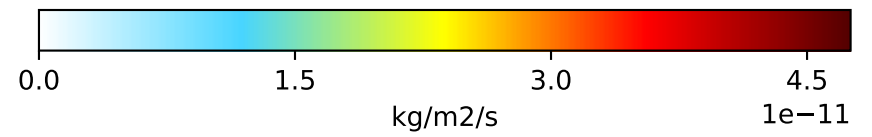
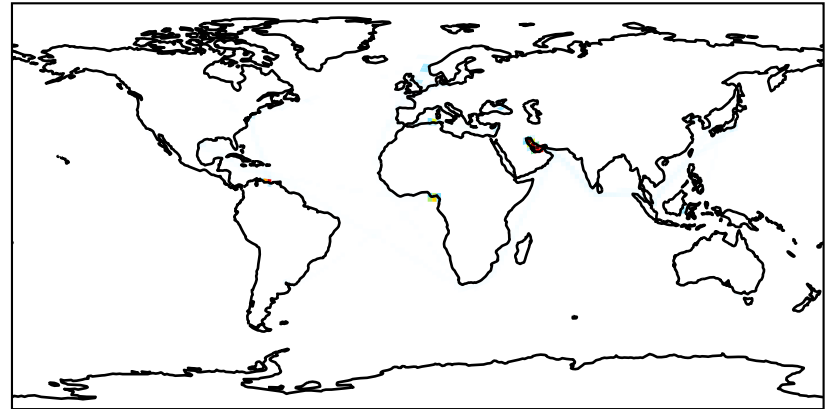
Undefined throughout domain  
unitless

# EmisALK4\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



GCHP\_13.0.0-rc.0 (Dev)  
c48



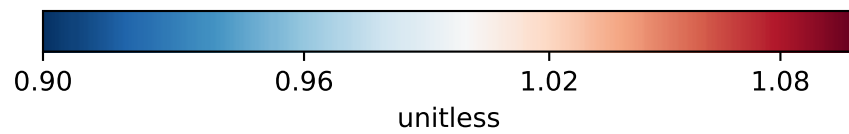
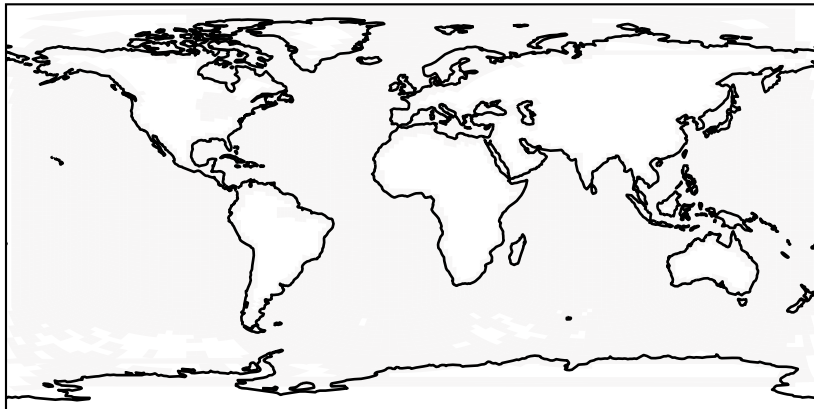
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

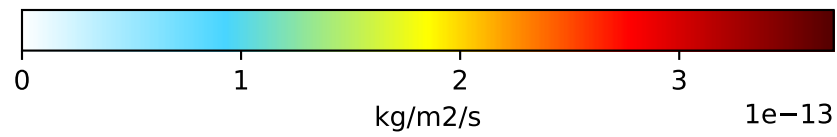
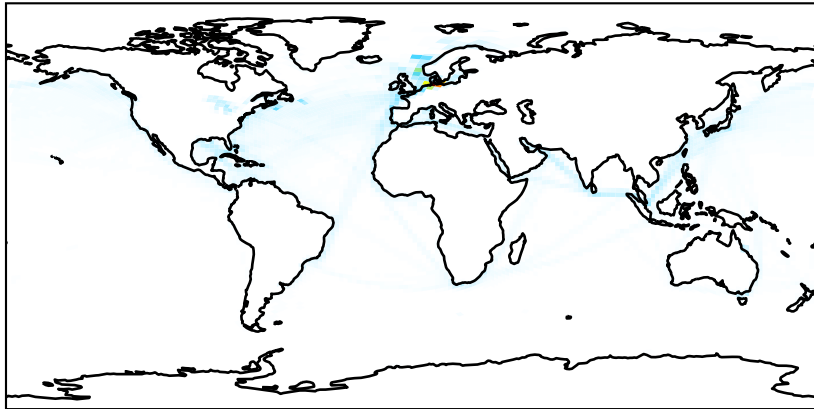


Ratio  
Dev/Ref, Fixed Range

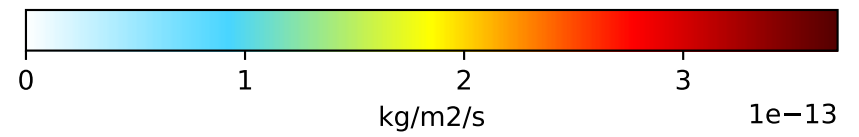


# EmisBCPI\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



GCHP\_13.0.0-rc.0 (Dev)  
c48



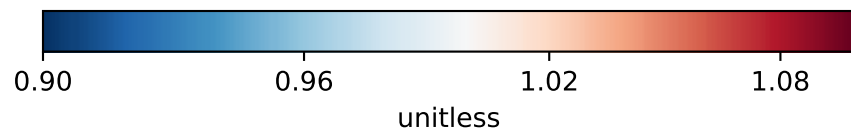
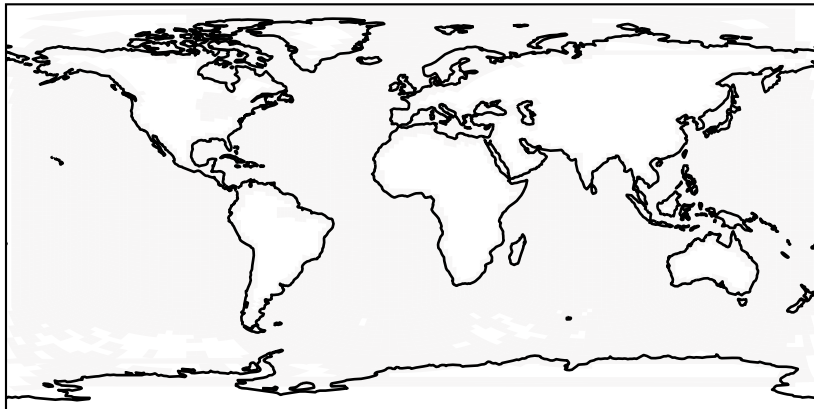
Difference  
Dev - Ref, Dynamic Range



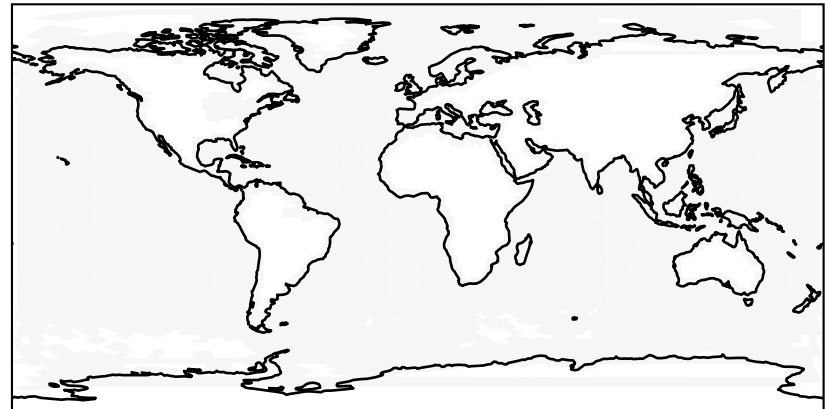
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

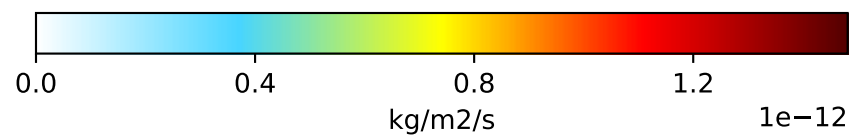


Ratio  
Dev/Ref, Fixed Range

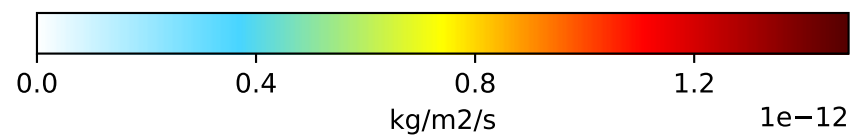
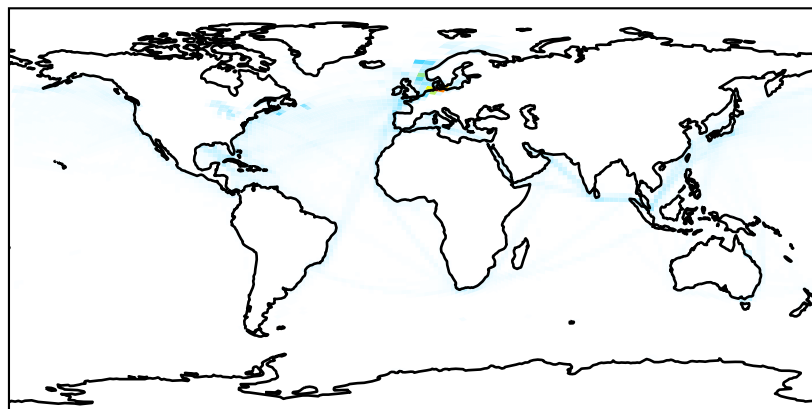


# EmisBCPO\_Ship (Jul2019)

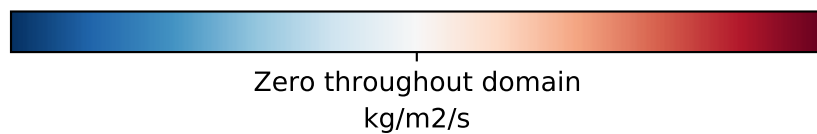
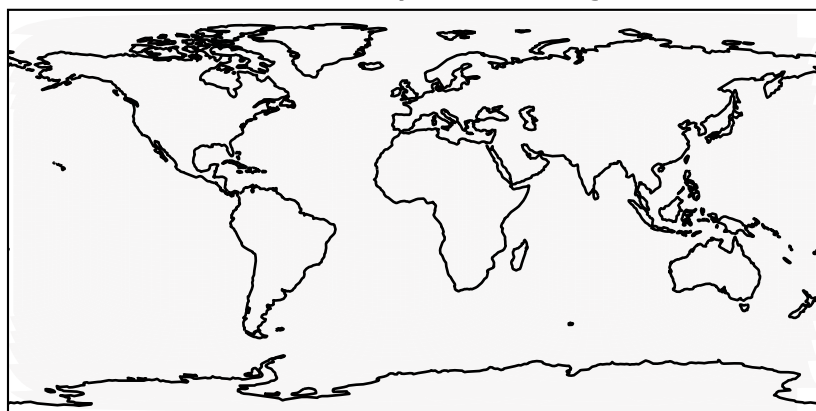
GCHP\_13.0.0-beta.1 (Ref)  
c48



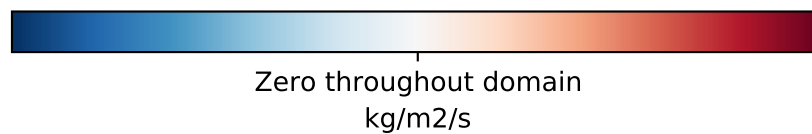
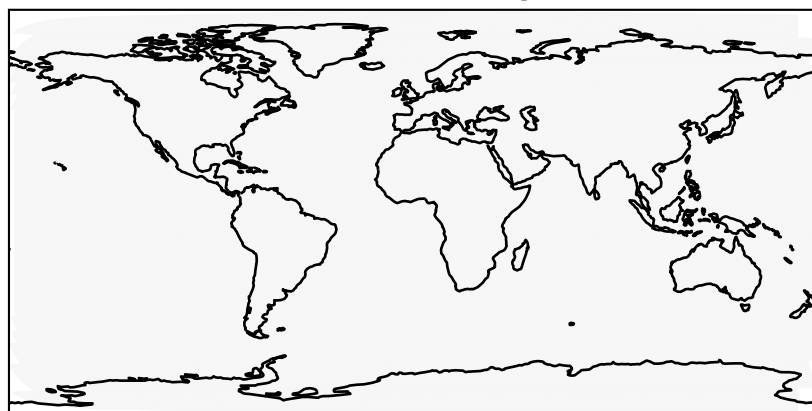
GCHP\_13.0.0-rc.0 (Dev)  
c48



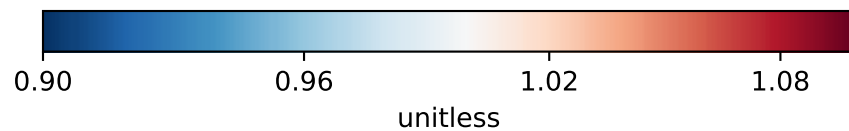
Difference  
Dev - Ref, Dynamic Range



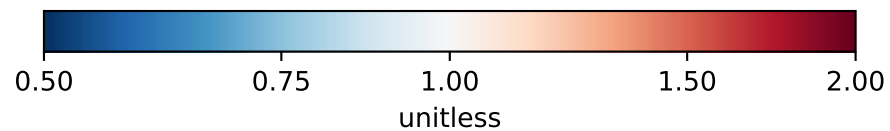
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

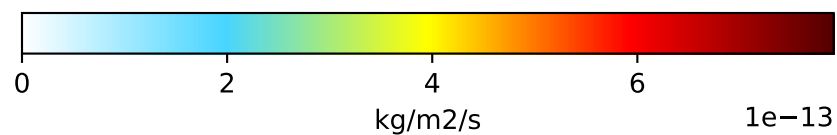
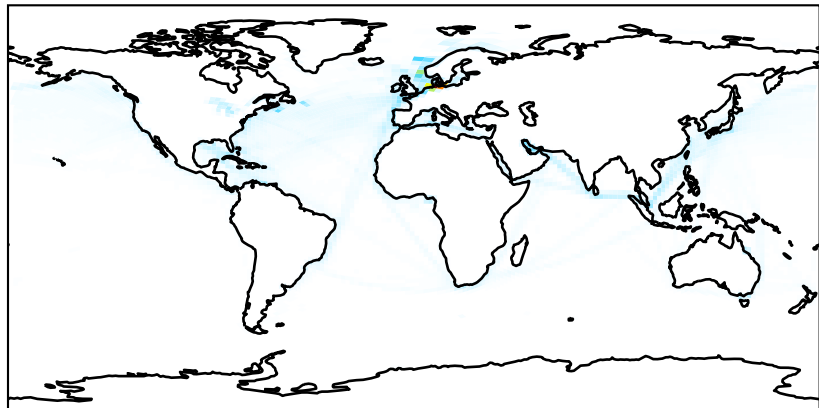


Ratio  
Dev/Ref, Fixed Range

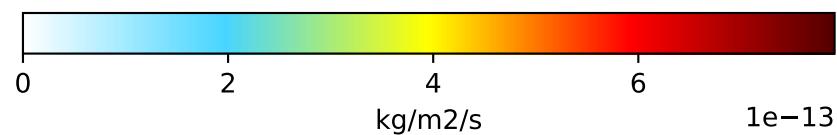
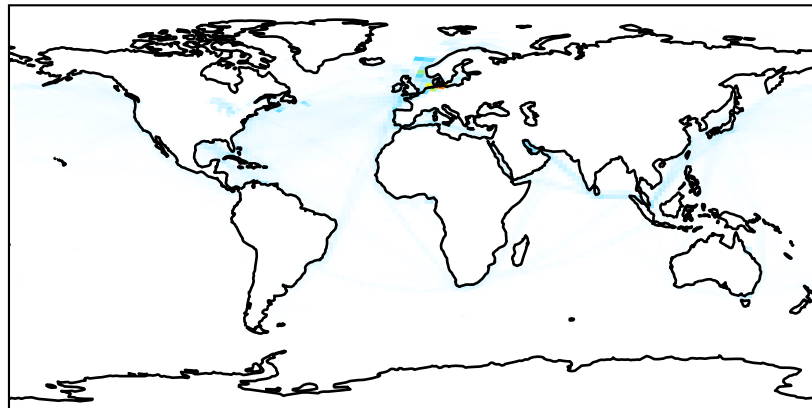


# EmisBENZ\_Ship (Jul2019)

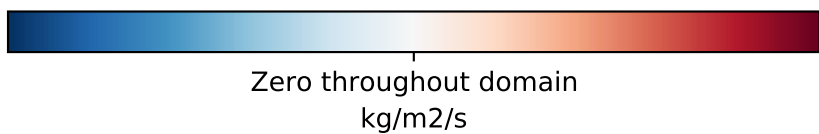
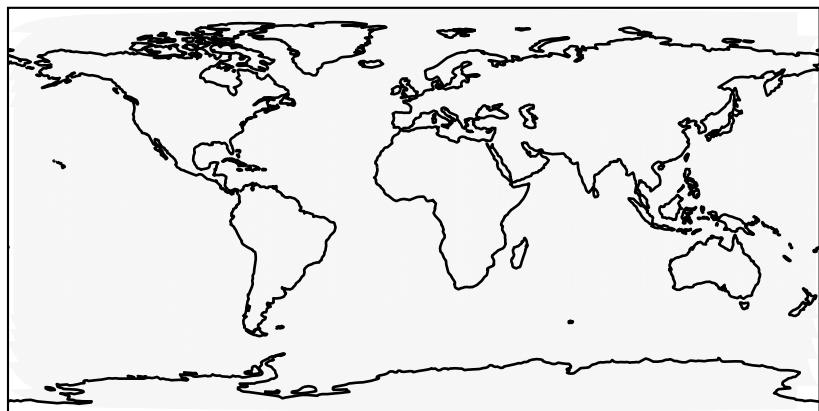
GCHP\_13.0.0-beta.1 (Ref)  
c48



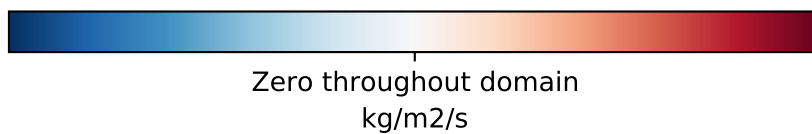
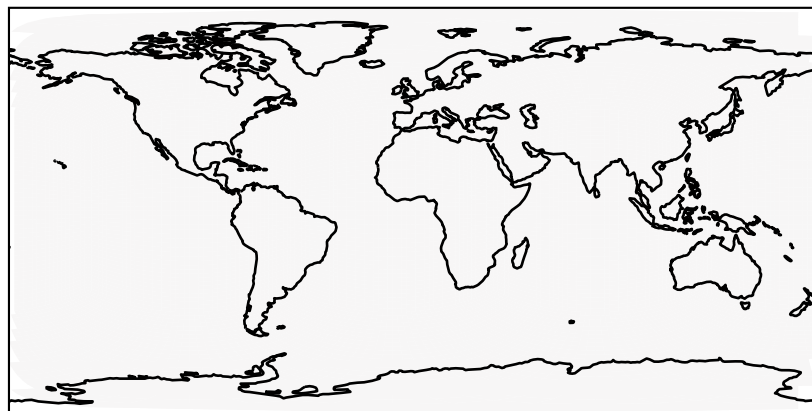
GCHP\_13.0.0-rc.0 (Dev)  
c48



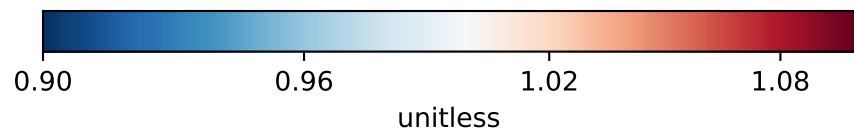
Difference  
Dev - Ref, Dynamic Range



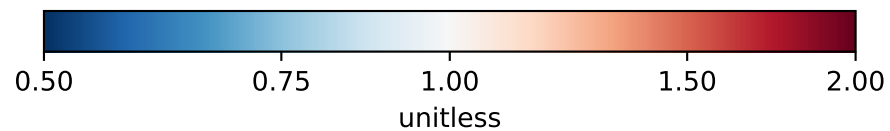
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

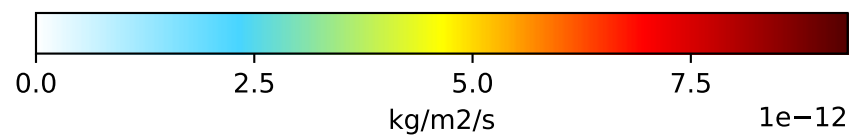
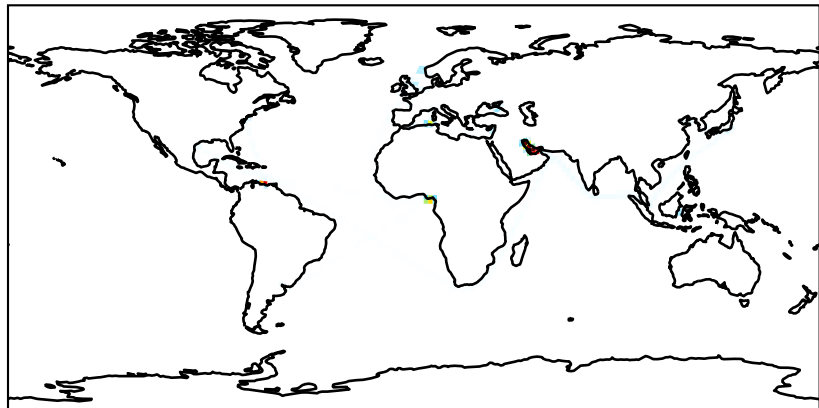


Ratio  
Dev/Ref, Fixed Range

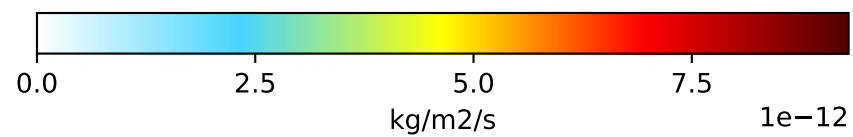


# EmisC2H6\_Ship (Jul2019)

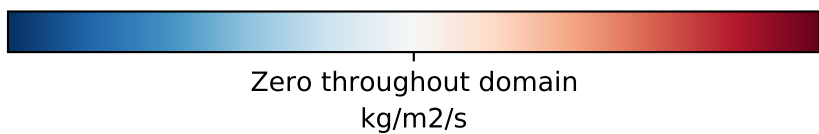
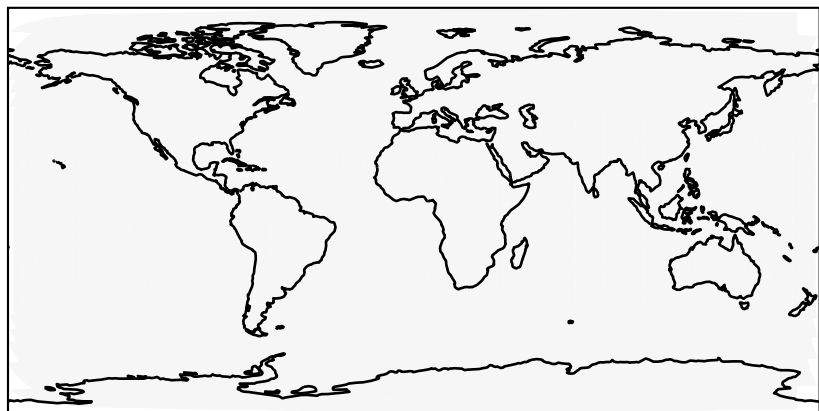
GCHP\_13.0.0-beta.1 (Ref)  
c48



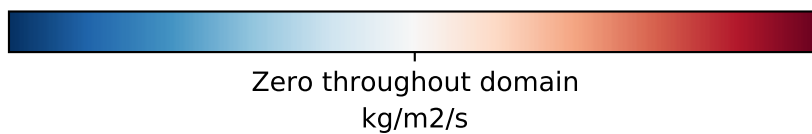
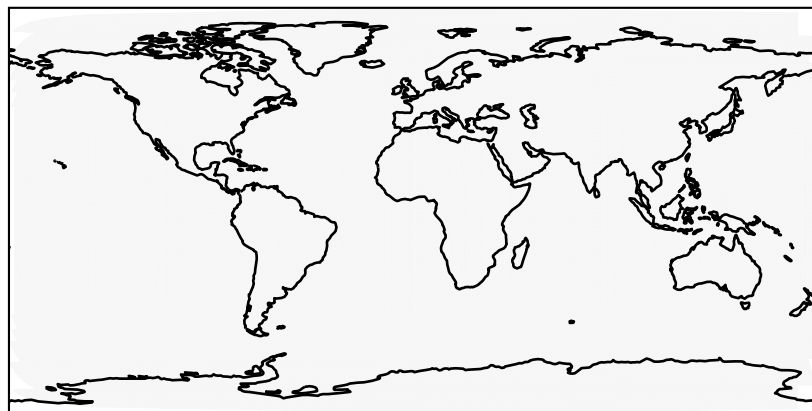
GCHP\_13.0.0-rc.0 (Dev)  
c48



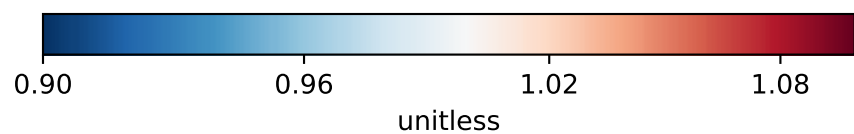
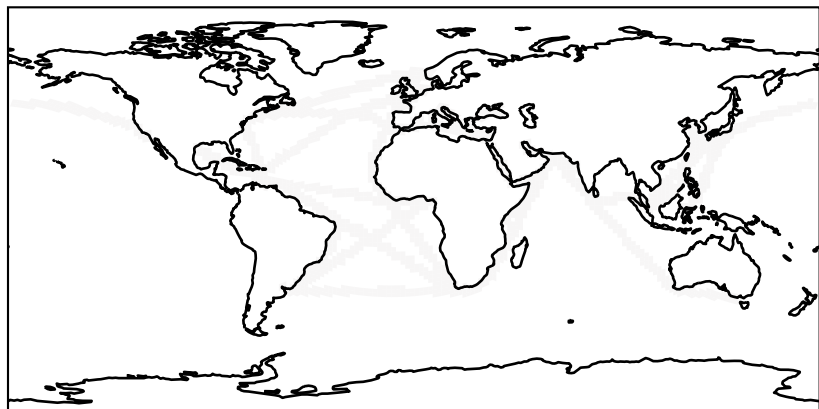
Difference  
Dev - Ref, Dynamic Range



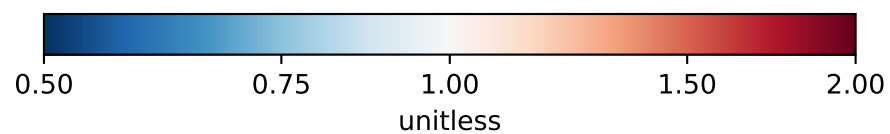
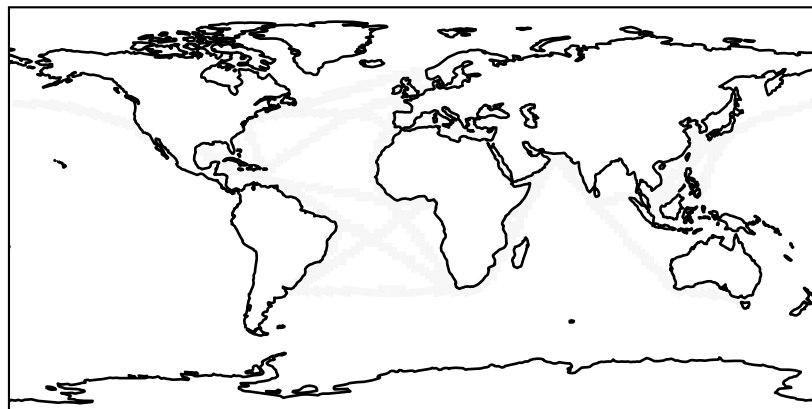
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

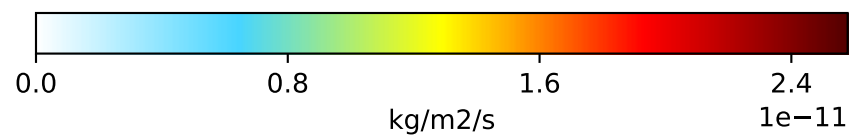
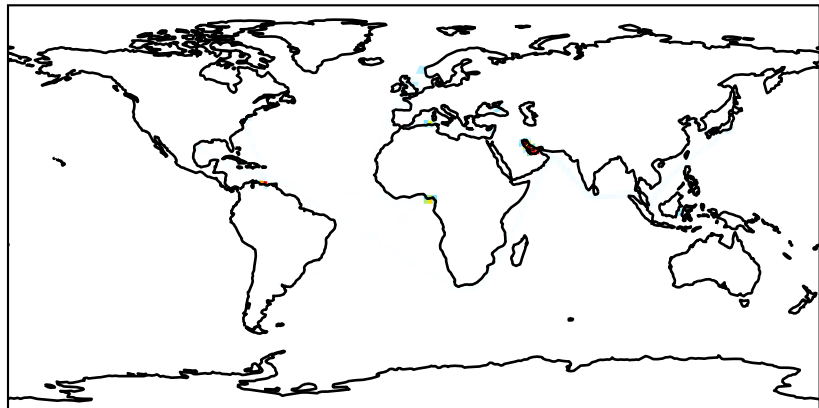


Ratio  
Dev/Ref, Fixed Range

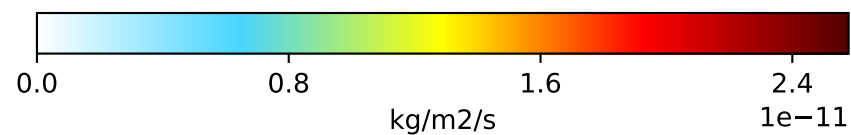
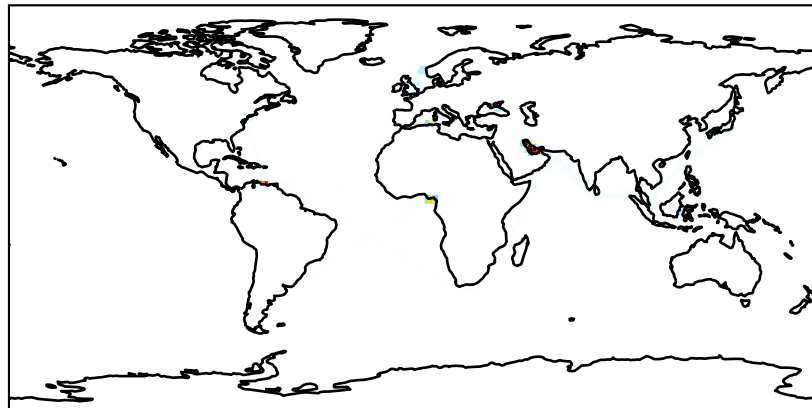


# EmisC3H8\_Ship (Jul2019)

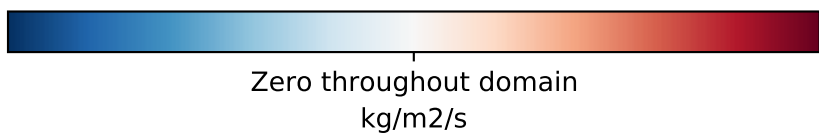
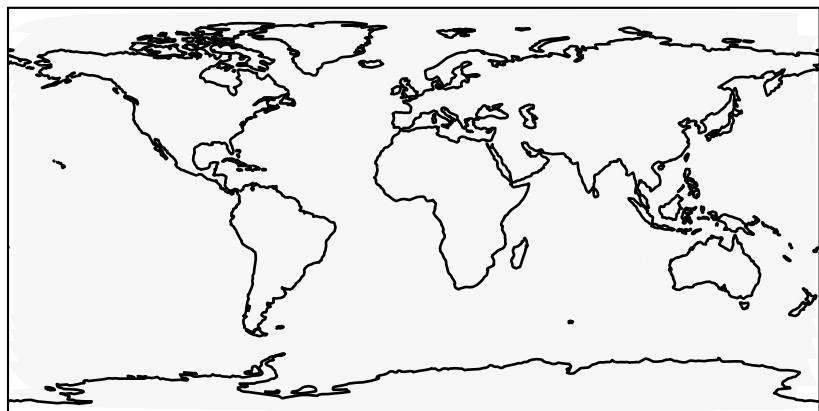
GCHP\_13.0.0-beta.1 (Ref)  
c48



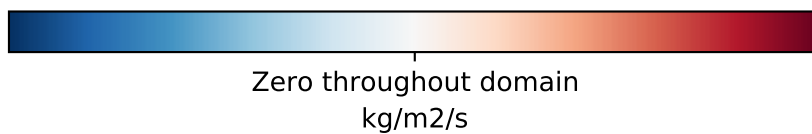
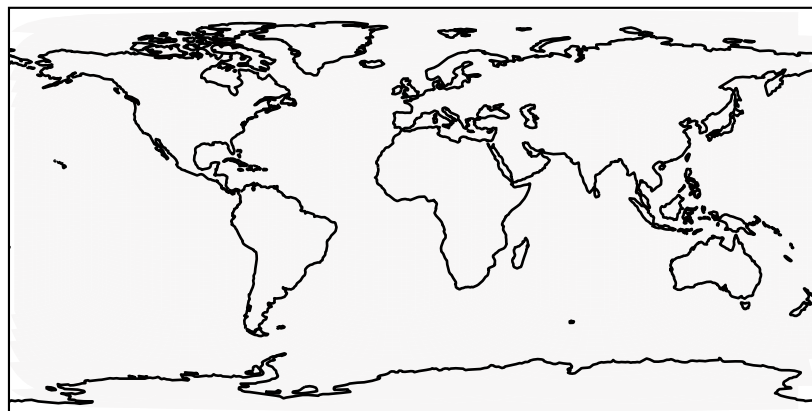
GCHP\_13.0.0-rc.0 (Dev)  
c48



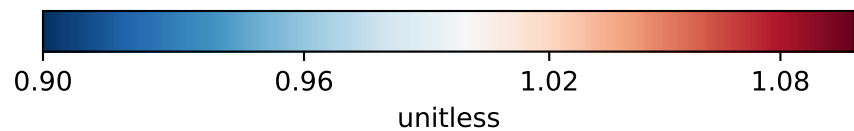
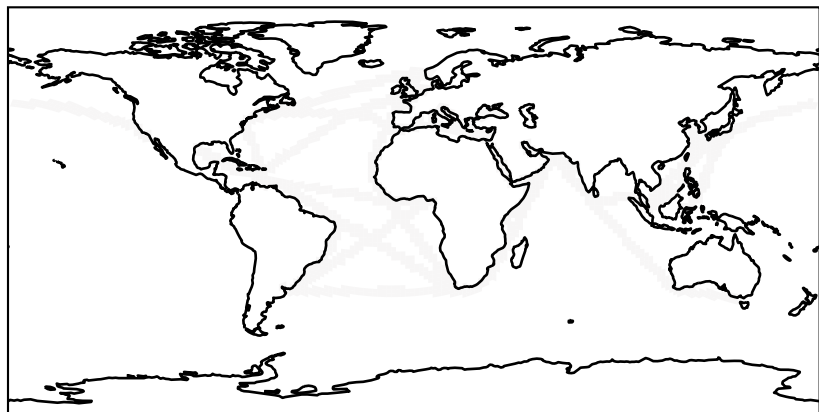
Difference  
Dev - Ref, Dynamic Range



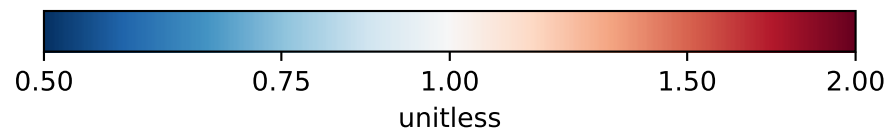
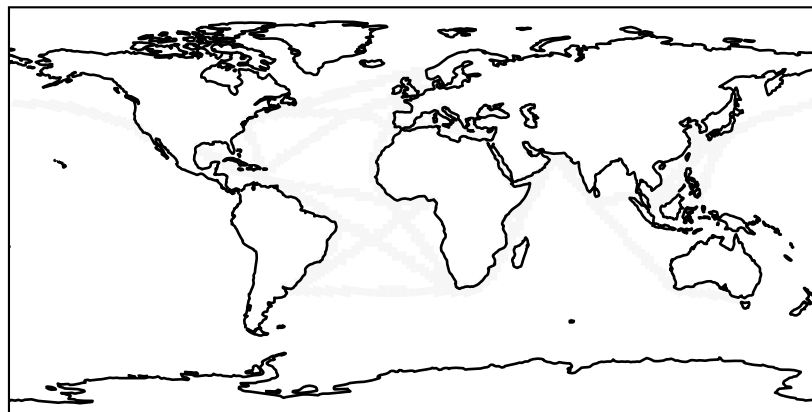
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

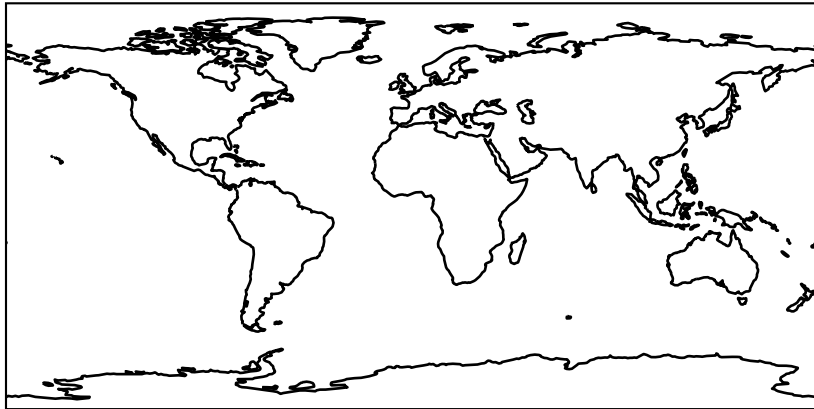


Ratio  
Dev/Ref, Fixed Range



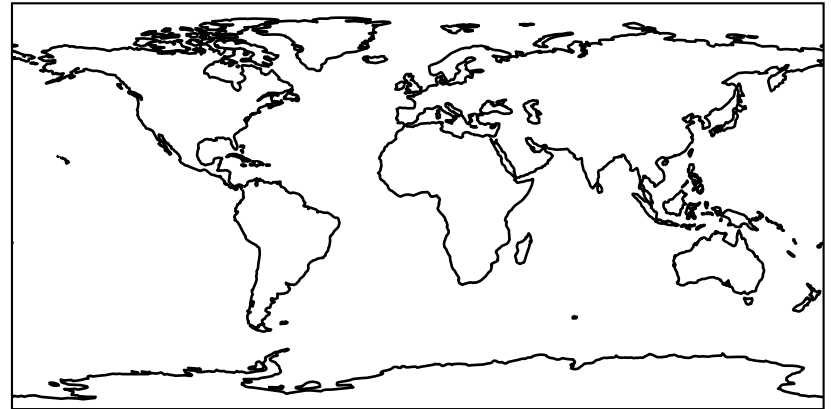
# EmisCH2O\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



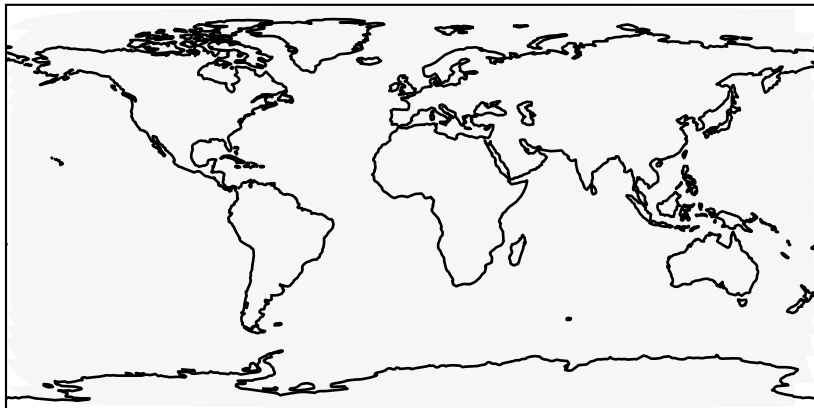
Zero throughout domain  
kg/m2/s

GCHP\_13.0.0-rc.0 (Dev)  
c48



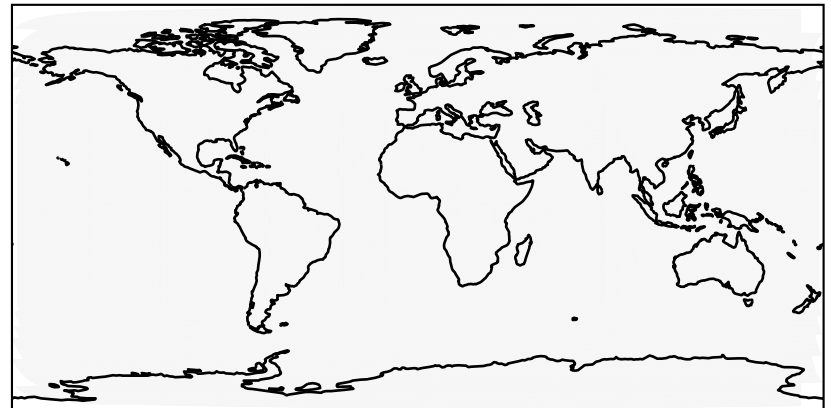
Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Dynamic Range



Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Restricted Range [5%,95%]



Zero throughout domain  
kg/m2/s

Ratio  
Dev/Ref, Dynamic Range



Undefined throughout domain  
unitless

Ratio  
Dev/Ref, Fixed Range



Undefined throughout domain  
unitless



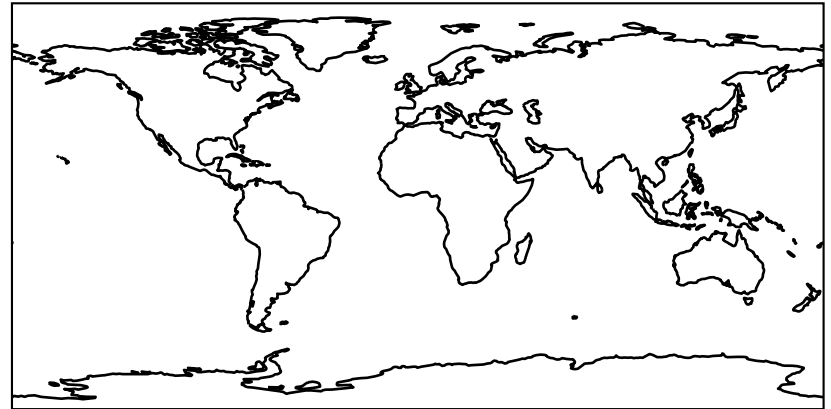
# EmisCO2\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



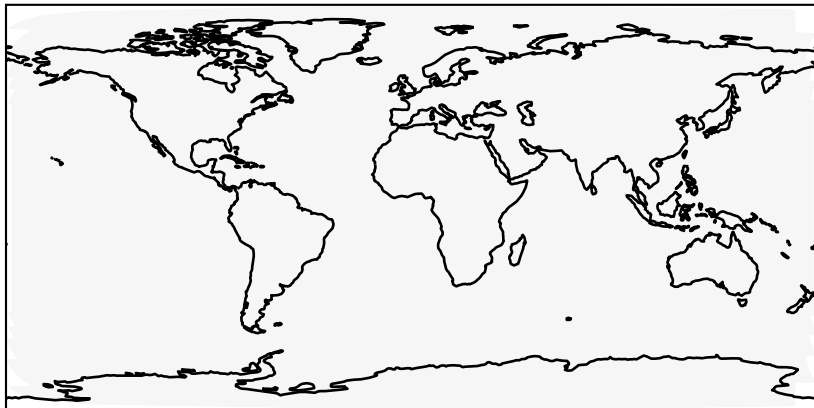
Zero throughout domain  
kg/m2/s

GCHP\_13.0.0-rc.0 (Dev)  
c48



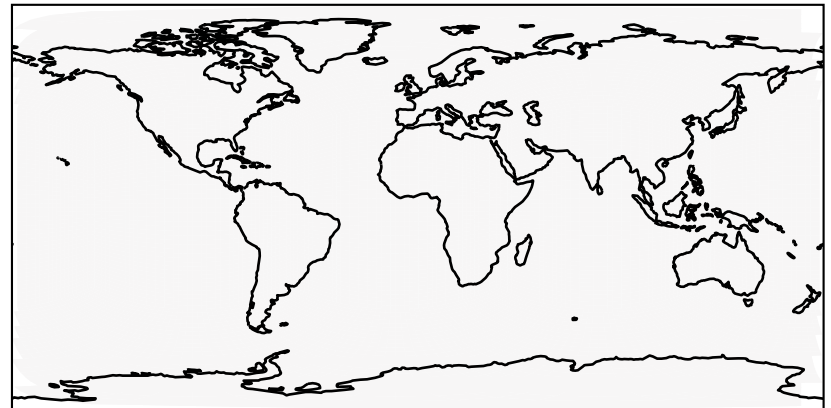
Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Dynamic Range



Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Restricted Range [5%,95%]



Zero throughout domain  
kg/m2/s

Ratio  
Dev/Ref, Dynamic Range



Undefined throughout domain  
unitless

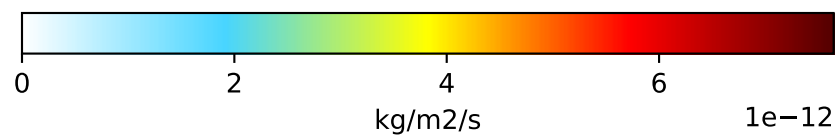
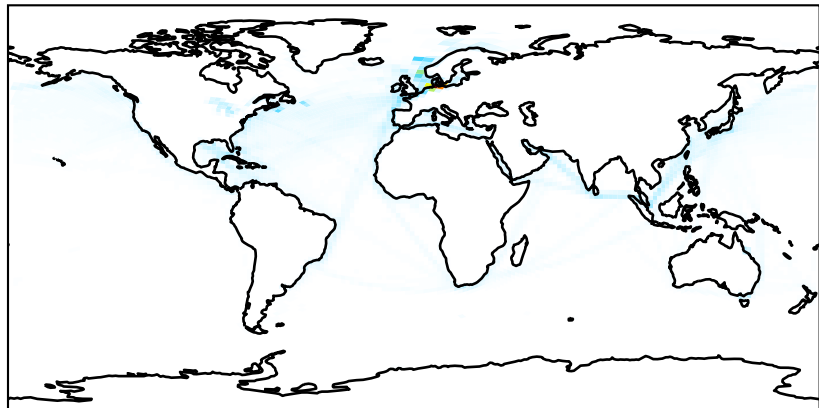
Ratio  
Dev/Ref, Fixed Range



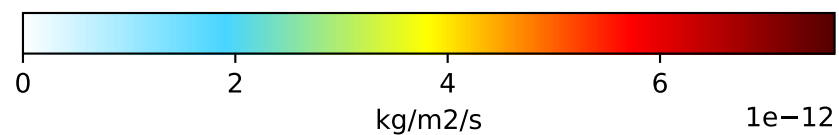
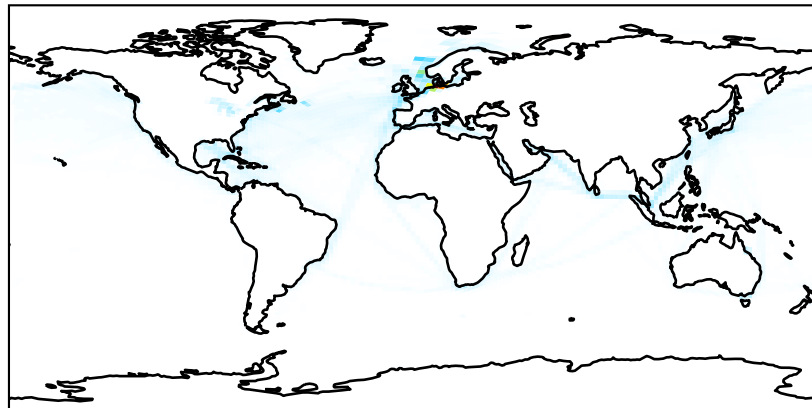
Undefined throughout domain  
unitless

# EmisCO\_Ship (Jul2019)

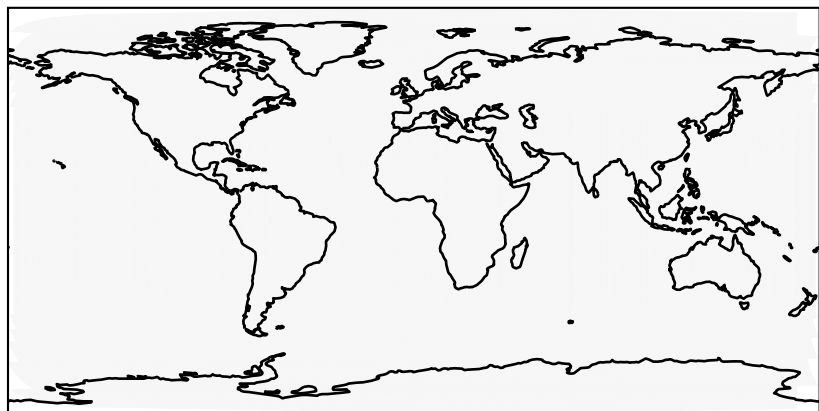
GCHP\_13.0.0-beta.1 (Ref)  
c48



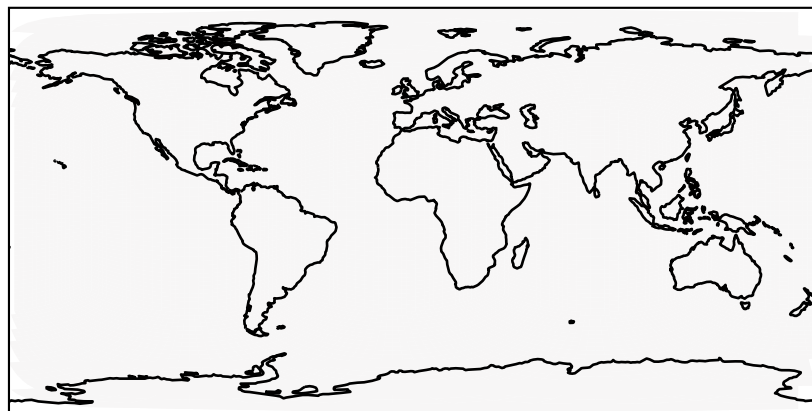
GCHP\_13.0.0-rc.0 (Dev)  
c48



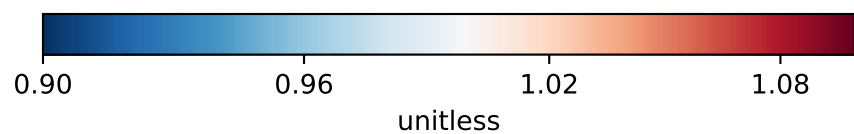
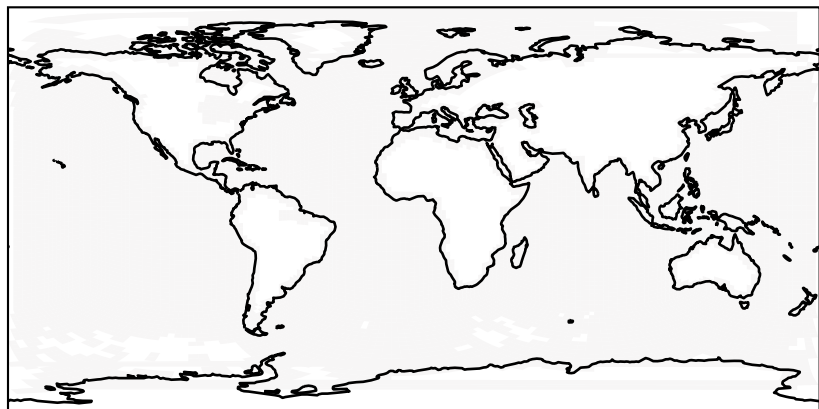
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

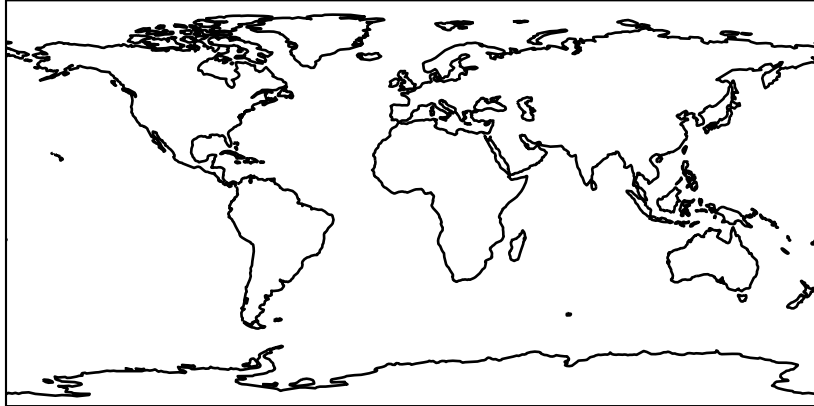


Ratio  
Dev/Ref, Fixed Range



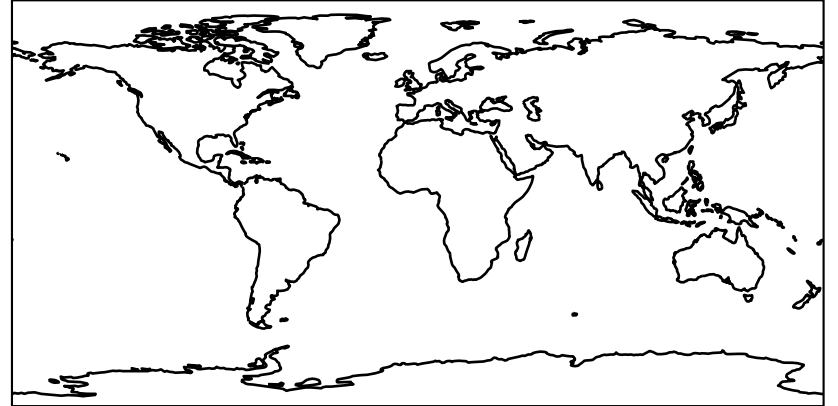
# EmisEOH\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



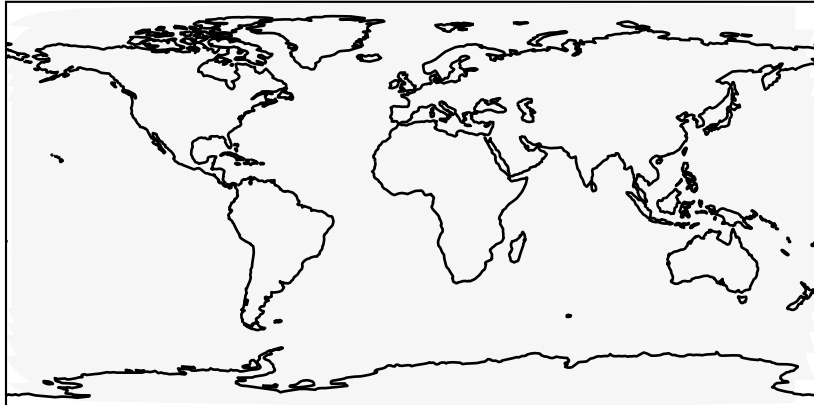
Zero throughout domain  
kg/m2/s

GCHP\_13.0.0-rc.0 (Dev)  
c48



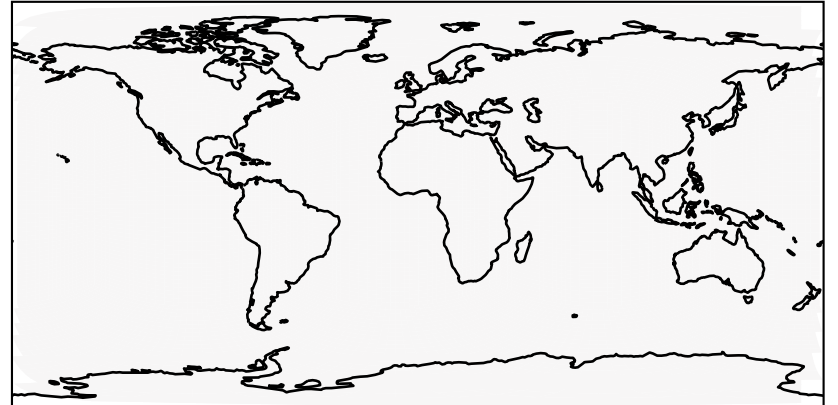
Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Dynamic Range



Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Restricted Range [5%,95%]



Zero throughout domain  
kg/m2/s

Ratio  
Dev/Ref, Dynamic Range



Undefined throughout domain  
unitless

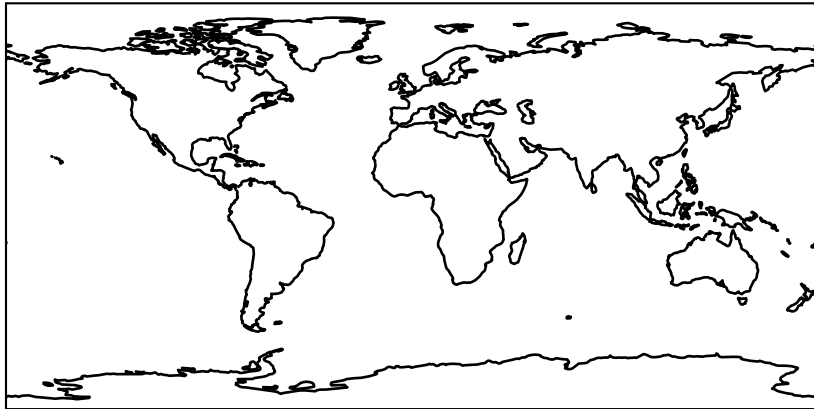
Ratio  
Dev/Ref, Fixed Range



Undefined throughout domain  
unitless

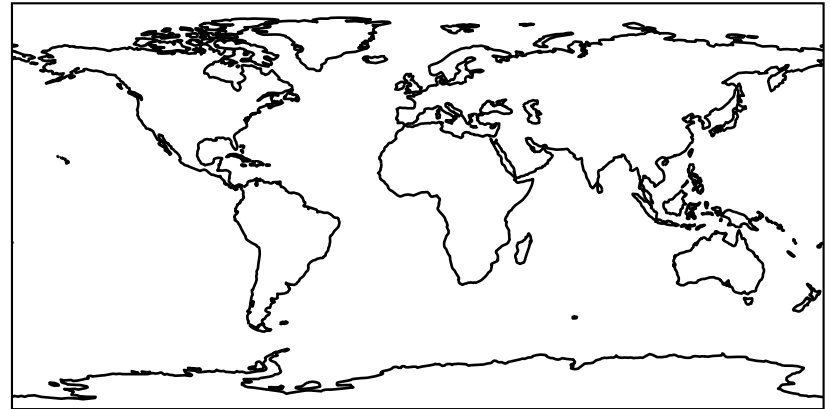
# EmisHCOOH\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



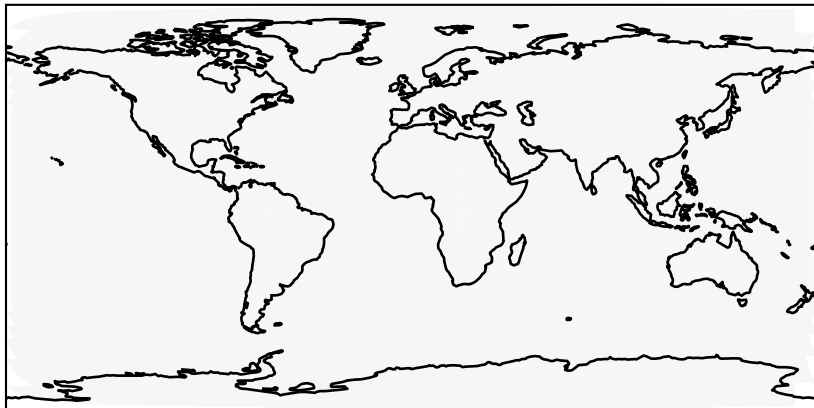
Zero throughout domain  
kg/m<sup>2</sup>/s

GCHP\_13.0.0-rc.0 (Dev)  
c48



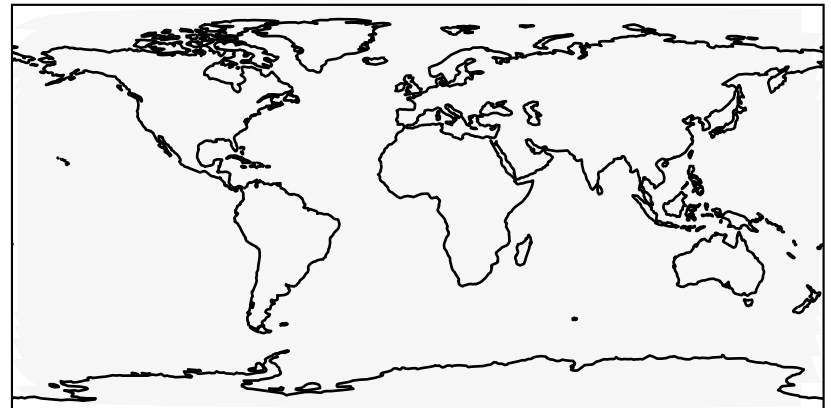
Zero throughout domain  
kg/m<sup>2</sup>/s

Difference  
Dev - Ref, Dynamic Range



Zero throughout domain  
kg/m<sup>2</sup>/s

Difference  
Dev - Ref, Restricted Range [5%,95%]



Zero throughout domain  
kg/m<sup>2</sup>/s

Ratio  
Dev/Ref, Dynamic Range



Undefined throughout domain  
unitless

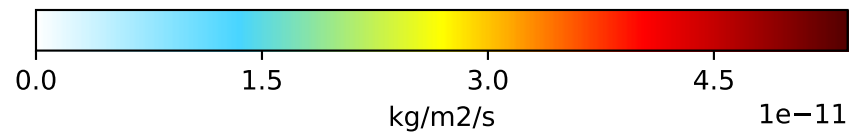
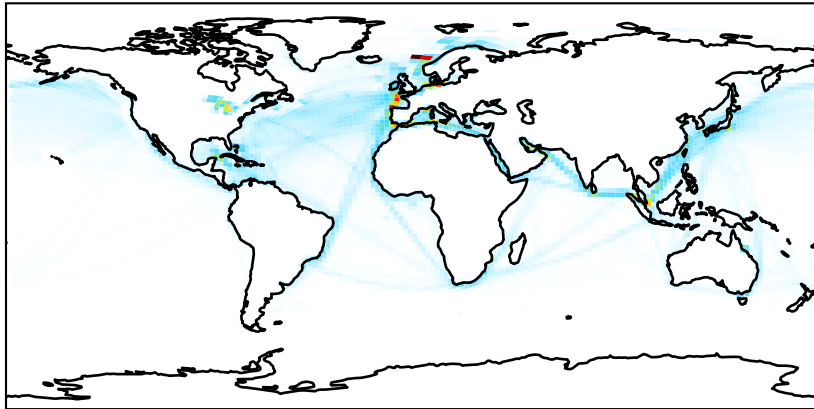
Ratio  
Dev/Ref, Fixed Range



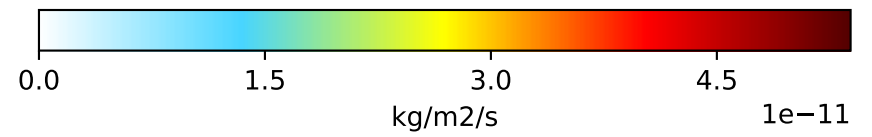
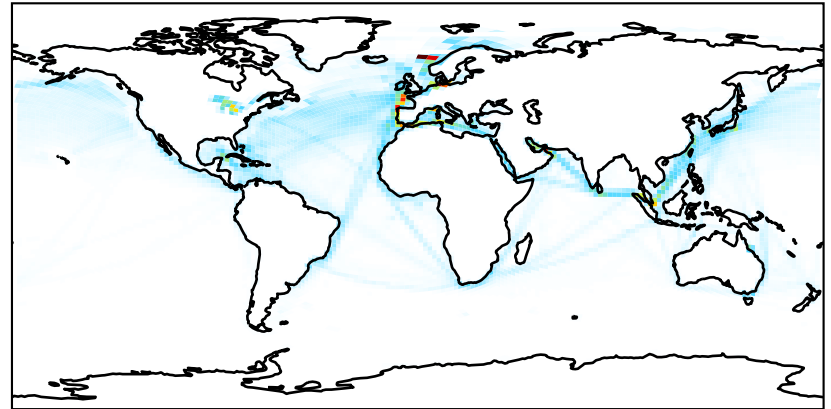
Undefined throughout domain  
unitless

# EmisHNO3\_Ship (Jul2019)

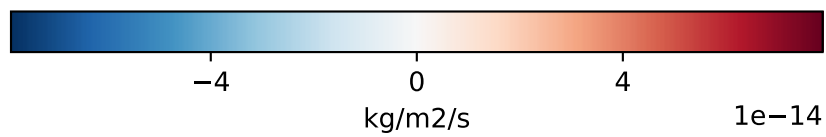
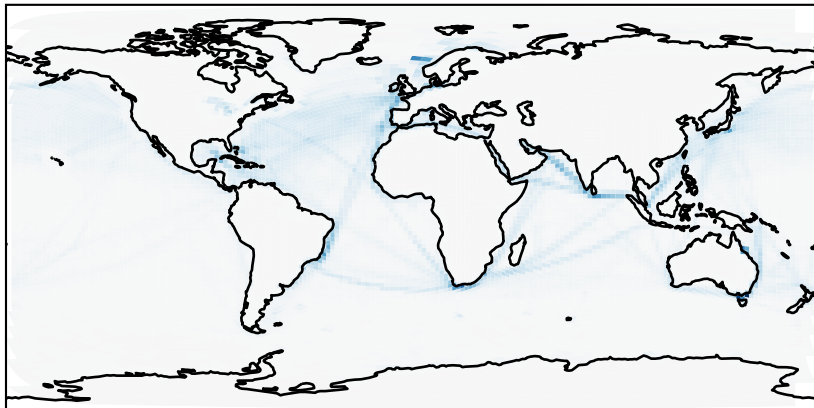
GCHP\_13.0.0-beta.1 (Ref)  
c48



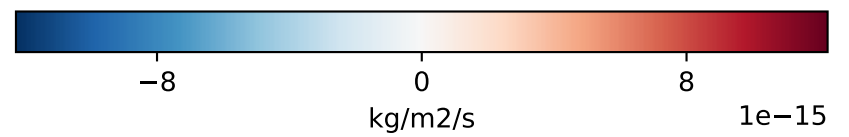
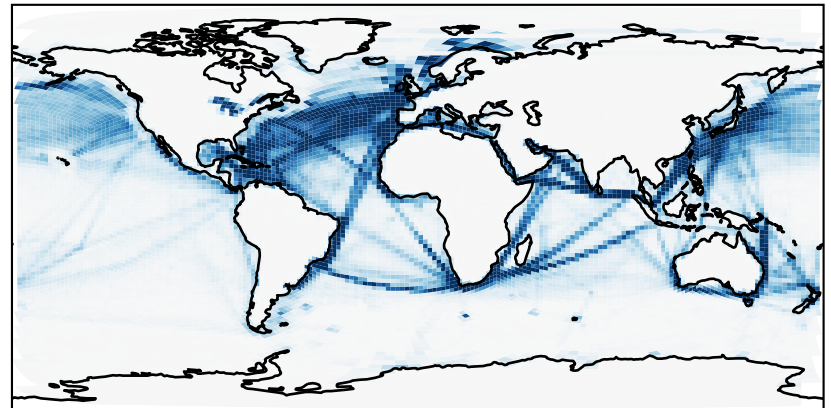
GCHP\_13.0.0-rc.0 (Dev)  
c48



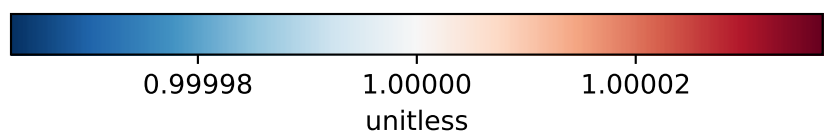
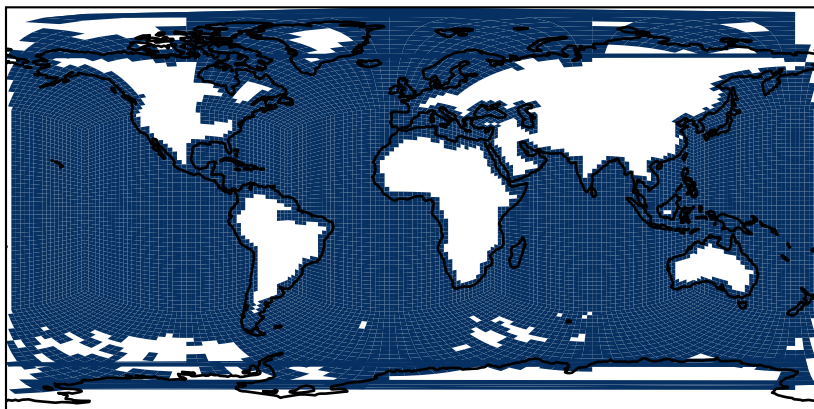
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

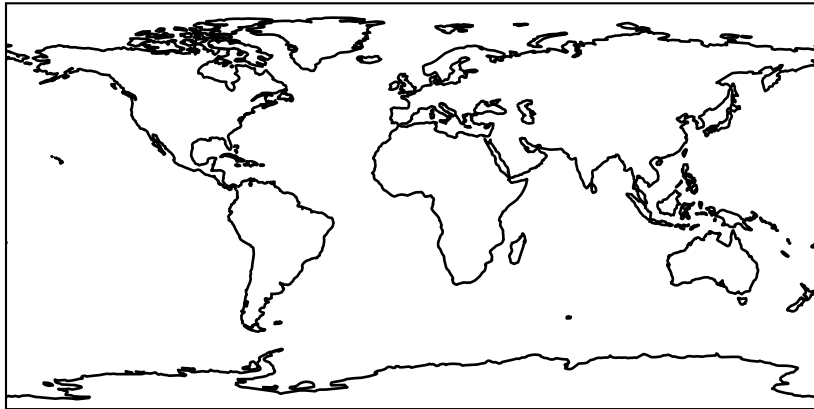


Ratio  
Dev/Ref, Fixed Range



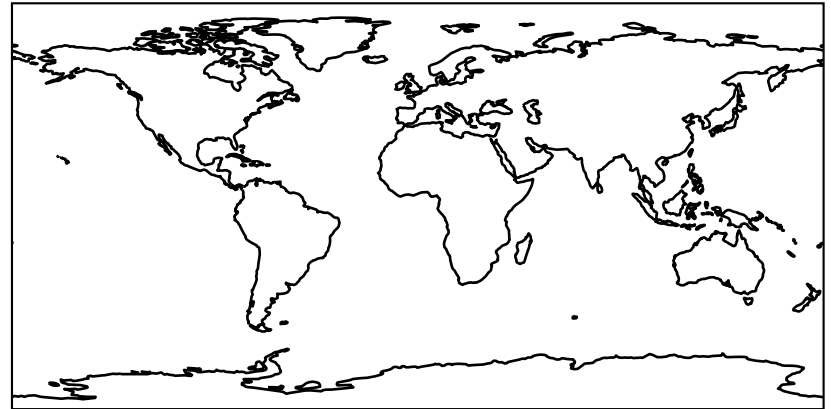
# EmisMEK\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



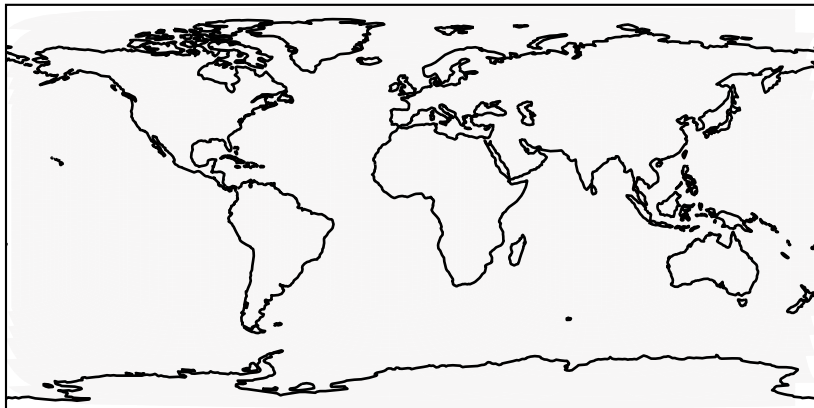
Zero throughout domain  
kg/m2/s

GCHP\_13.0.0-rc.0 (Dev)  
c48



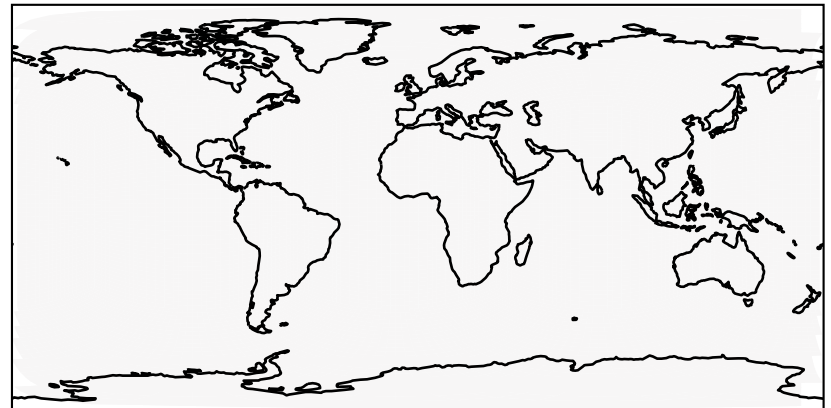
Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Dynamic Range



Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Restricted Range [5%,95%]



Zero throughout domain  
kg/m2/s

Ratio  
Dev/Ref, Dynamic Range



Undefined throughout domain  
unitless

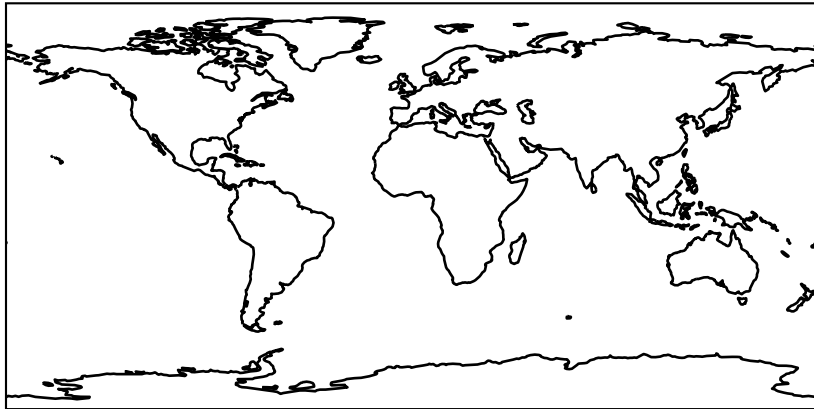
Ratio  
Dev/Ref, Fixed Range



Undefined throughout domain  
unitless

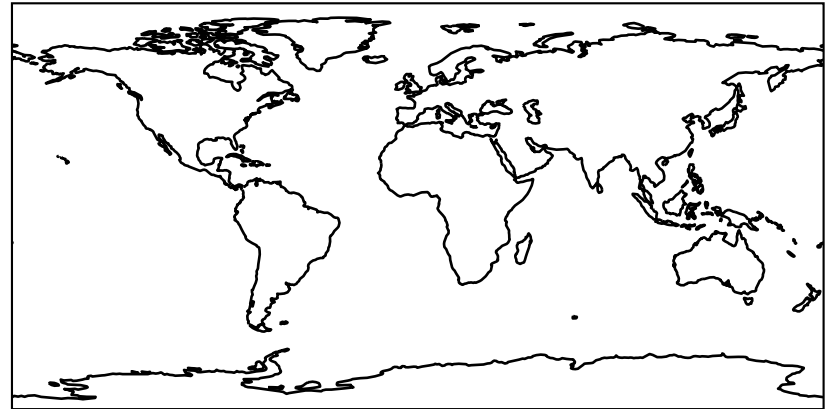
# EmisMOH\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



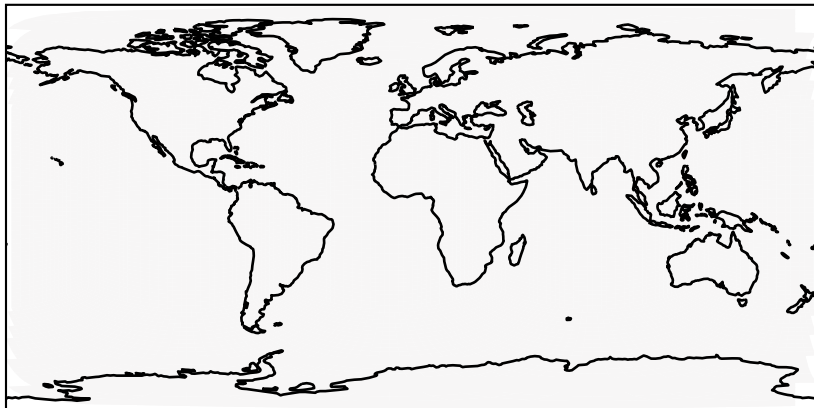
Zero throughout domain  
kg/m2/s

GCHP\_13.0.0-rc.0 (Dev)  
c48



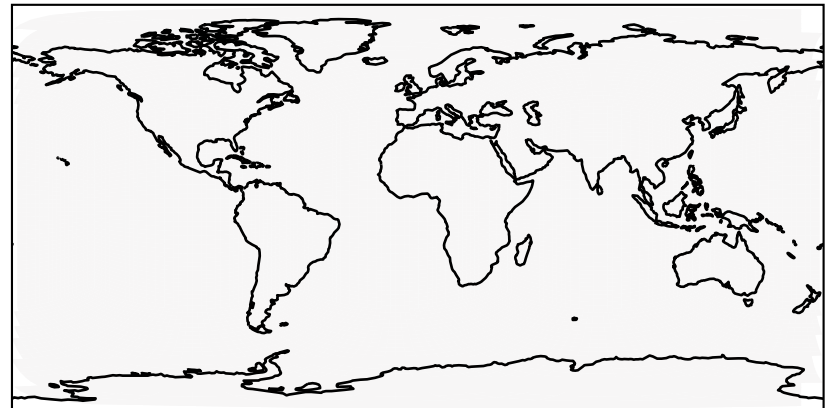
Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Dynamic Range



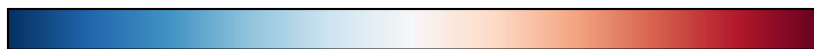
Zero throughout domain  
kg/m2/s

Difference  
Dev - Ref, Restricted Range [5%,95%]



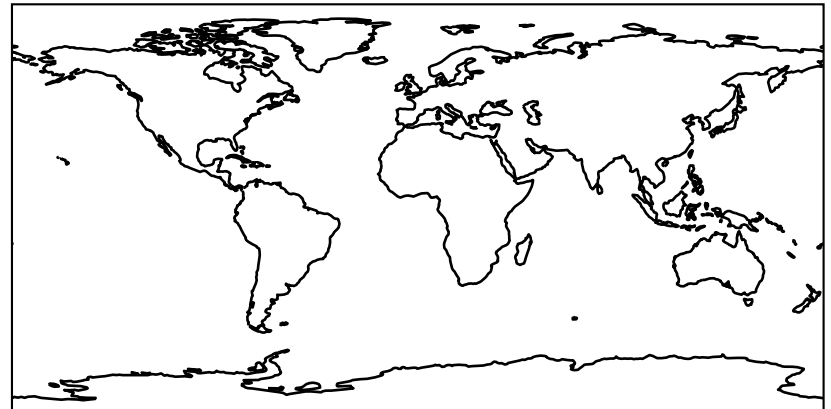
Zero throughout domain  
kg/m2/s

Ratio  
Dev/Ref, Dynamic Range



Undefined throughout domain  
unitless

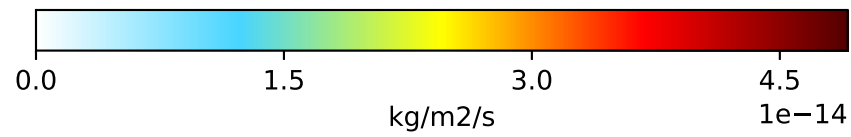
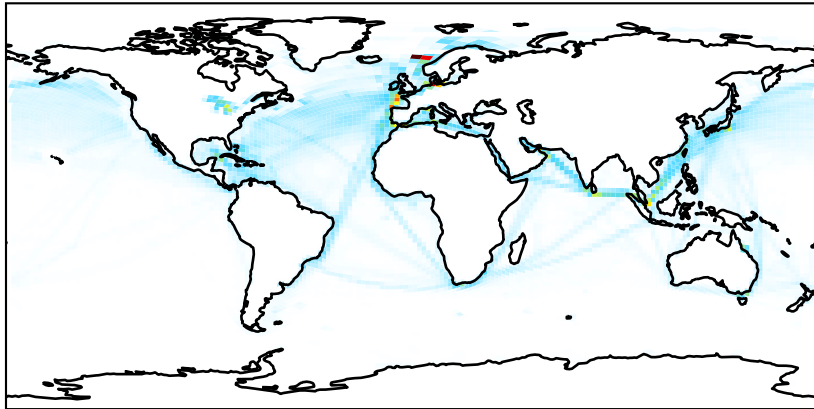
Ratio  
Dev/Ref, Fixed Range



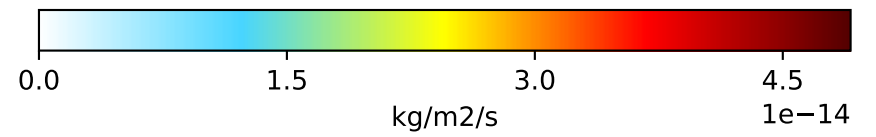
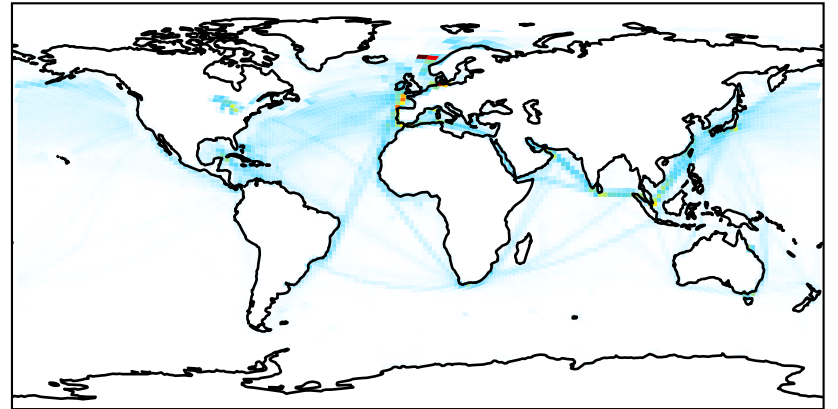
Undefined throughout domain  
unitless

# EmisNH3\_Ship (Jul2019)

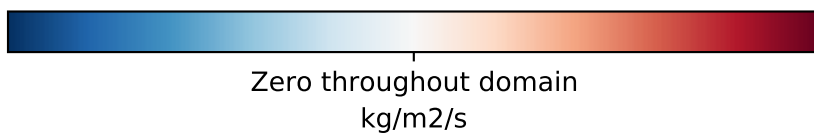
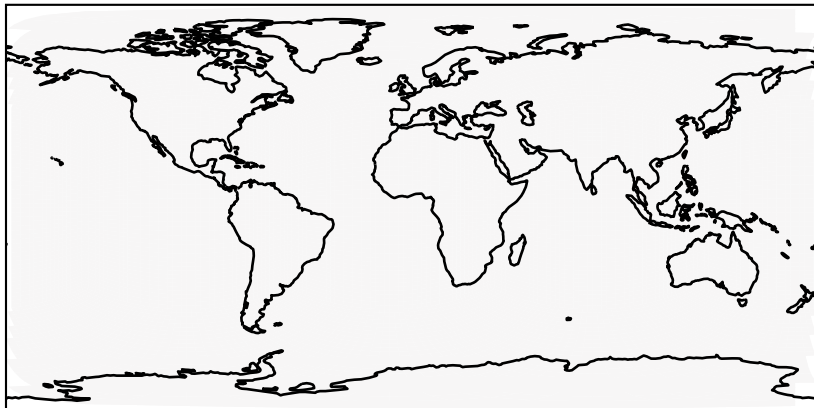
GCHP\_13.0.0-beta.1 (Ref)  
c48



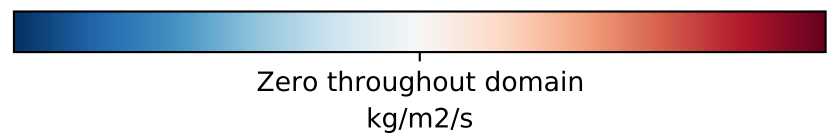
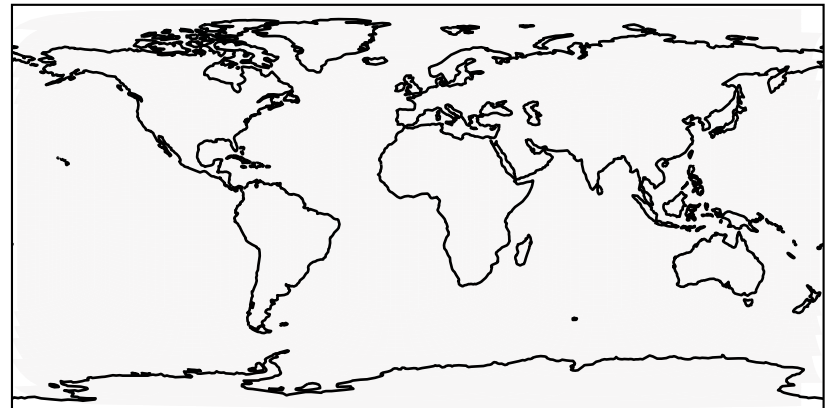
GCHP\_13.0.0-rc.0 (Dev)  
c48



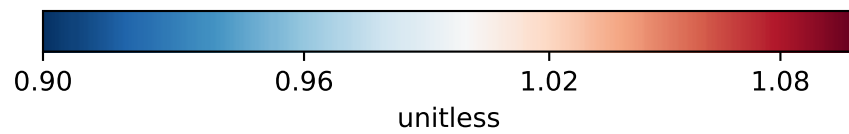
Difference  
Dev - Ref, Dynamic Range



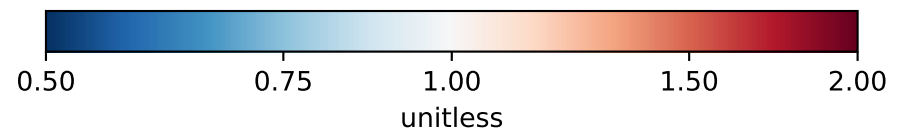
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range



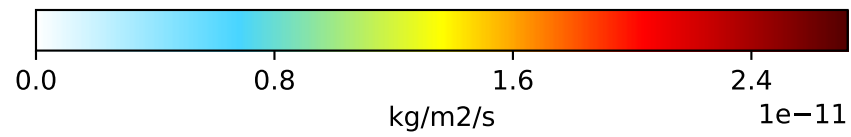
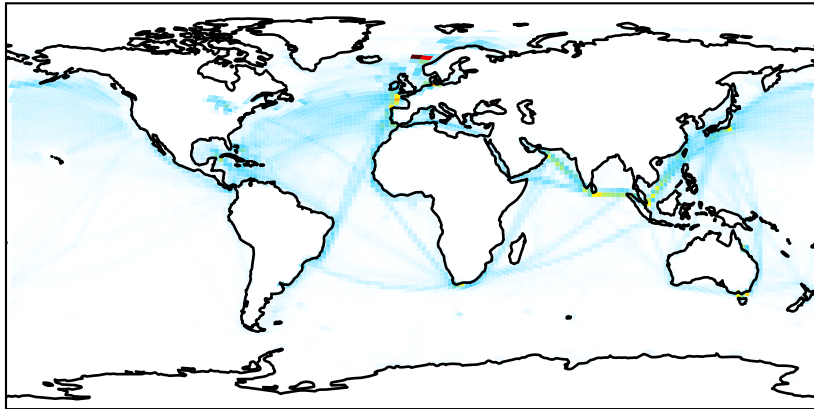
Ratio  
Dev/Ref, Fixed Range



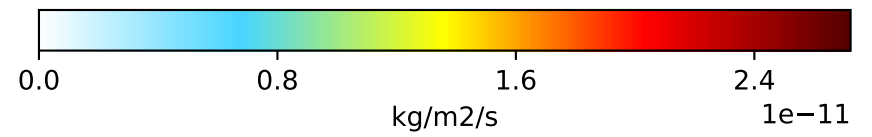
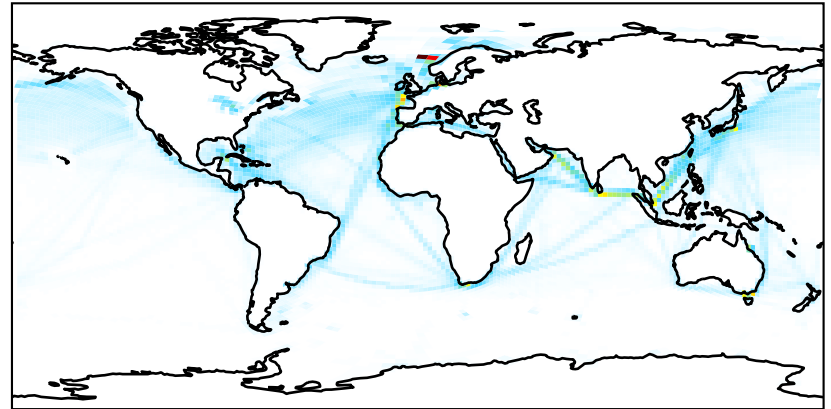


# EmisNO2\_Ship (Jul2019)

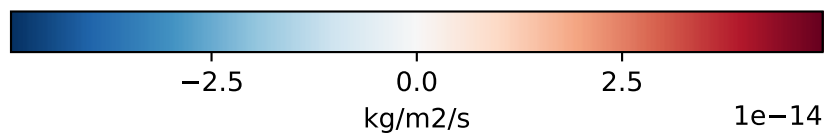
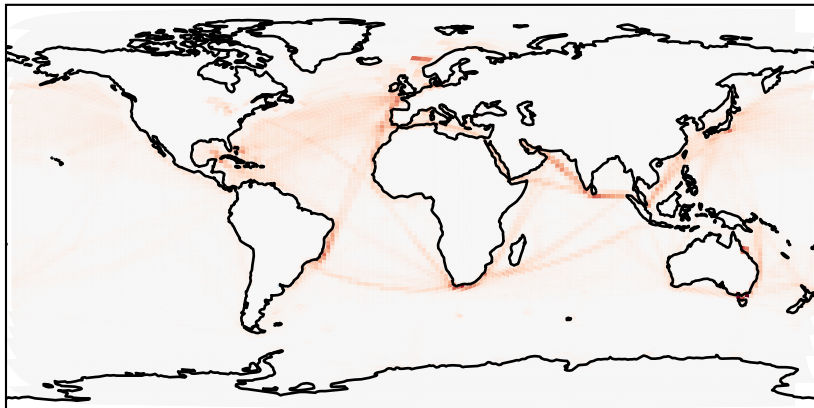
GCHP\_13.0.0-beta.1 (Ref)  
c48



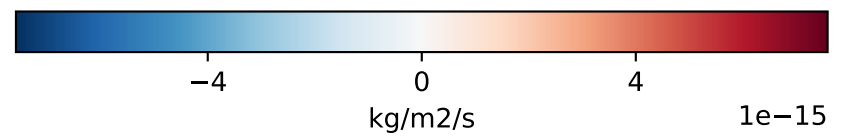
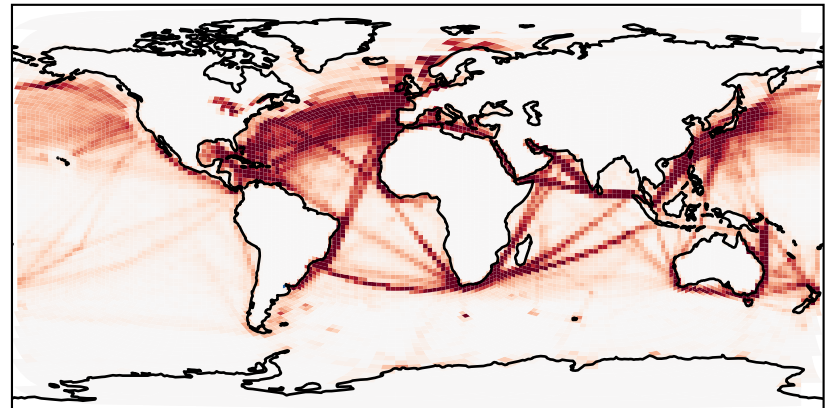
GCHP\_13.0.0-rc.0 (Dev)  
c48



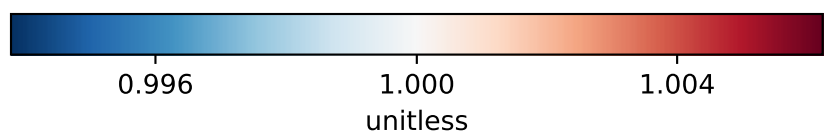
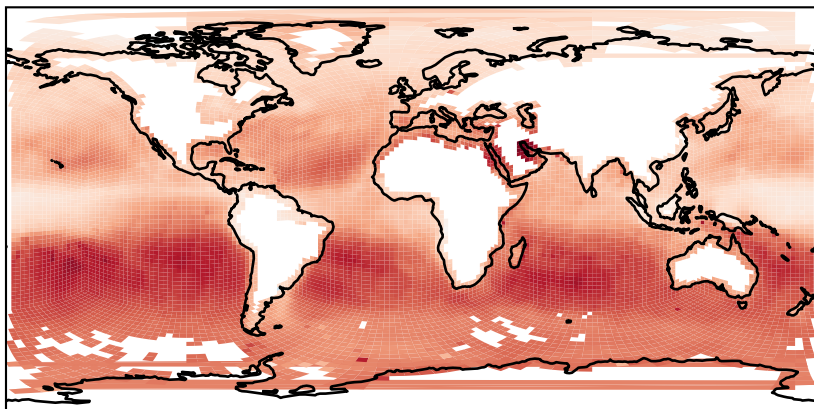
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

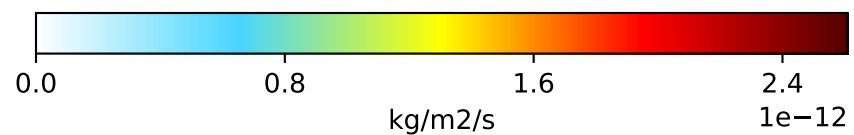
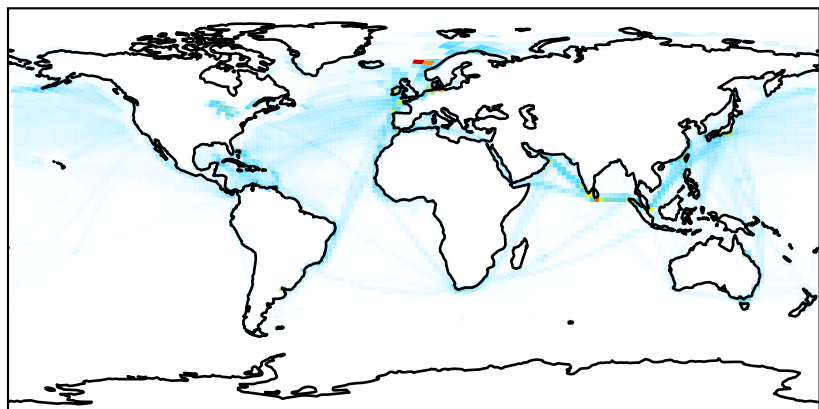


Ratio  
Dev/Ref, Fixed Range

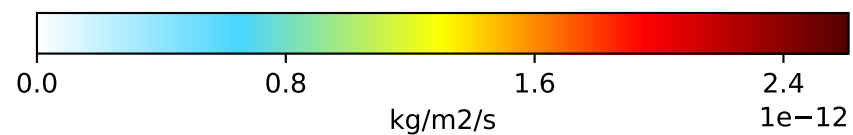
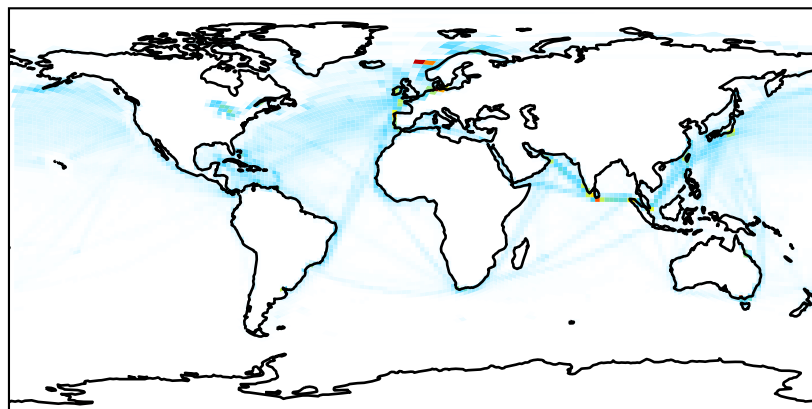


# EmisNO\_Ship (Jul2019)

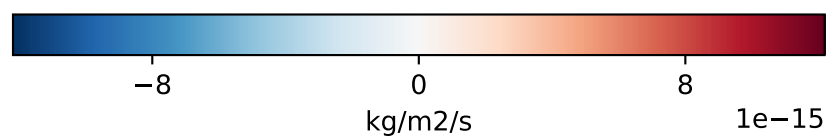
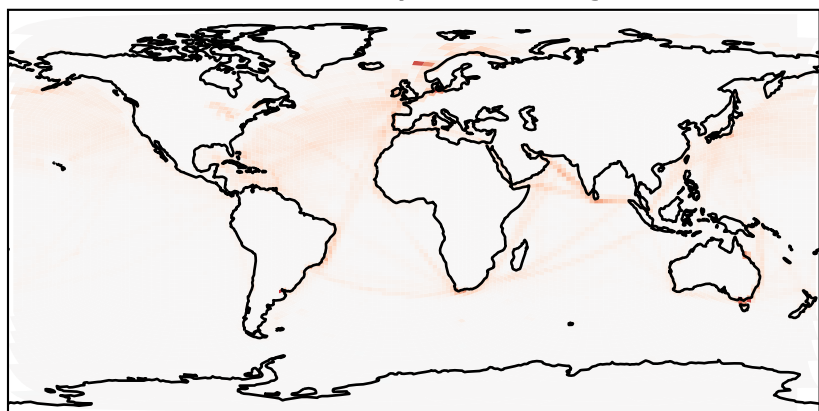
GCHP\_13.0.0-beta.1 (Ref)  
c48



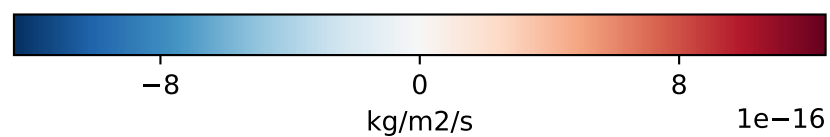
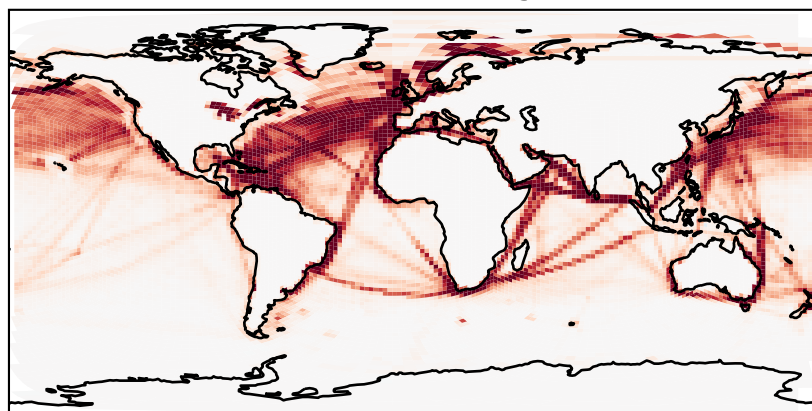
GCHP\_13.0.0-rc.0 (Dev)  
c48



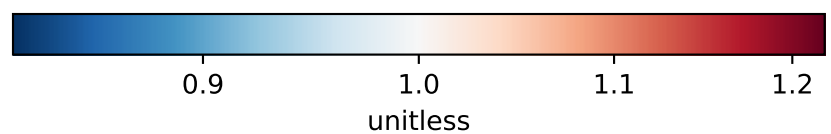
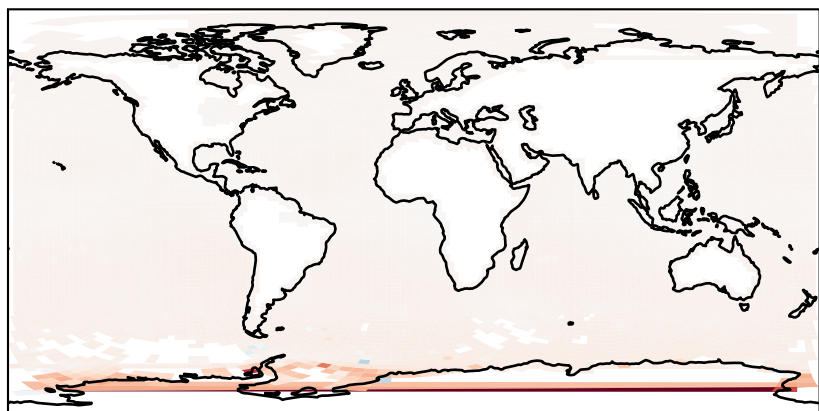
Difference  
Dev - Ref, Dynamic Range



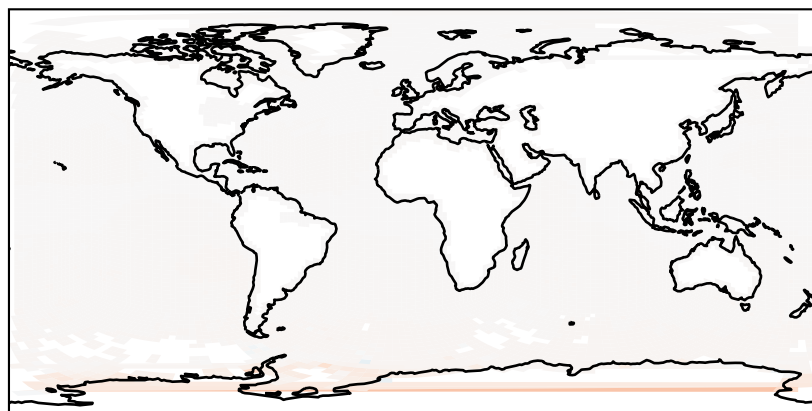
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

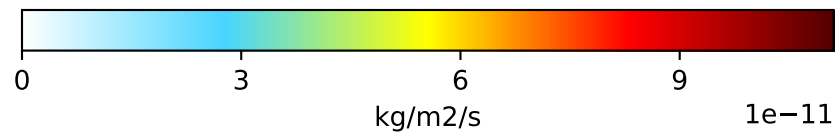
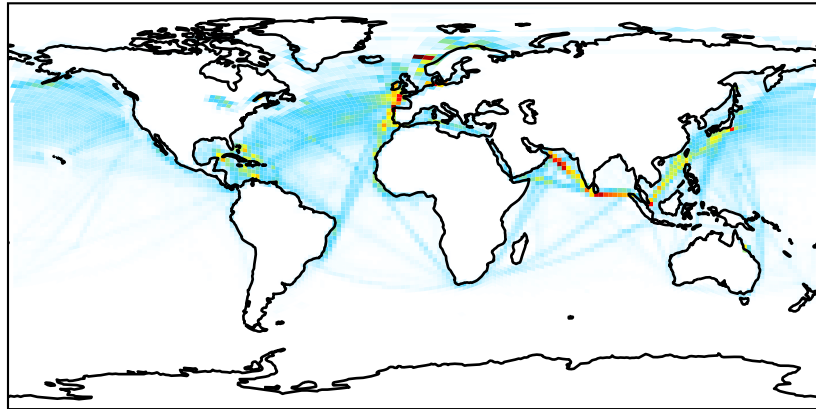


Ratio  
Dev/Ref, Fixed Range

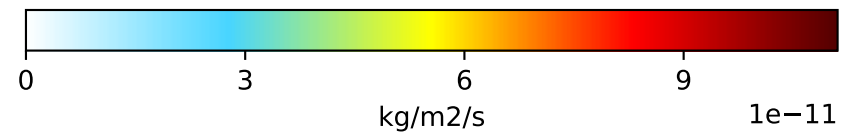
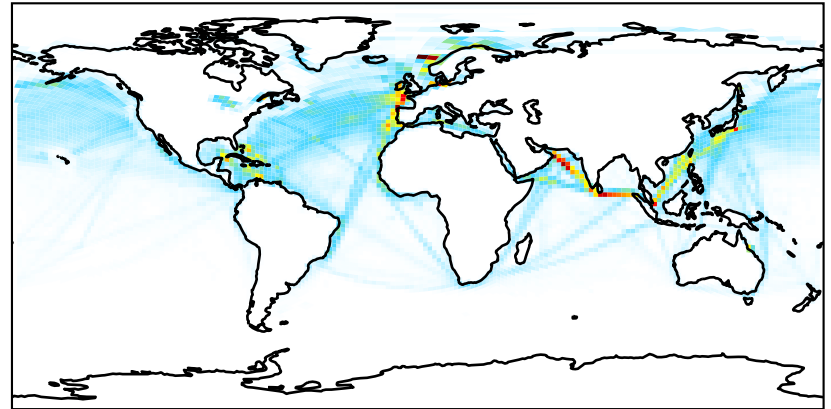


# EmisO3\_Ship (Jul2019)

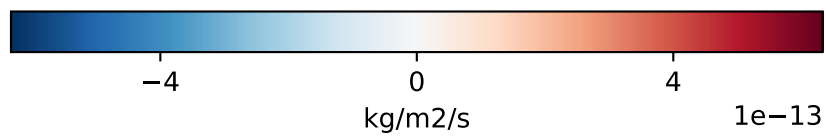
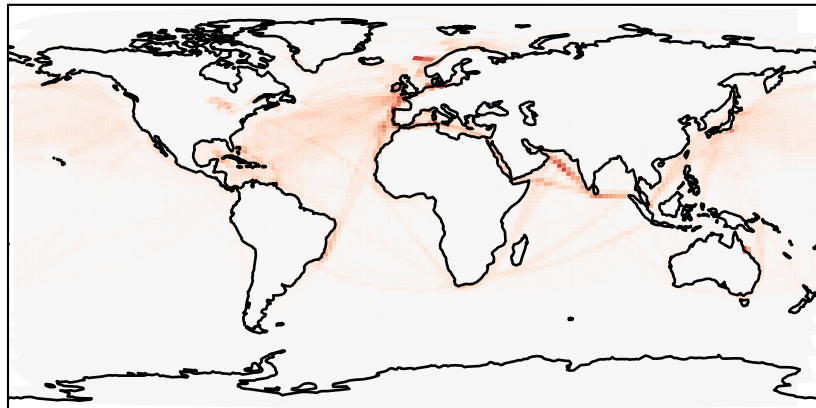
GCHP\_13.0.0-beta.1 (Ref)  
c48



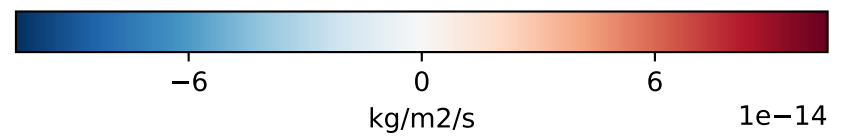
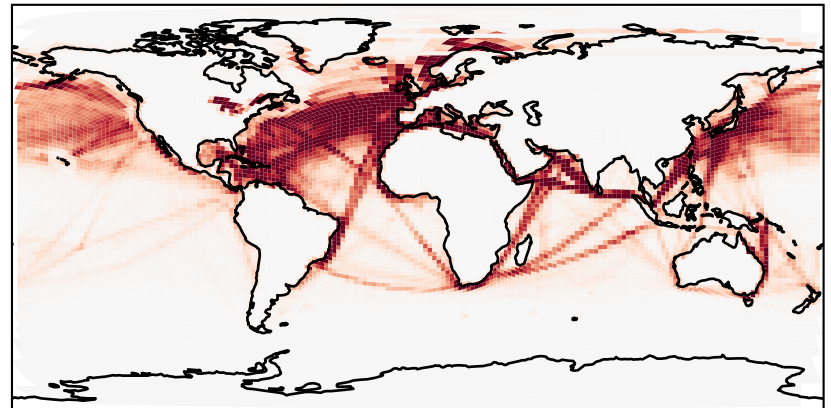
GCHP\_13.0.0-rc.0 (Dev)  
c48



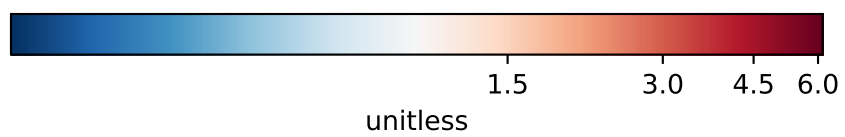
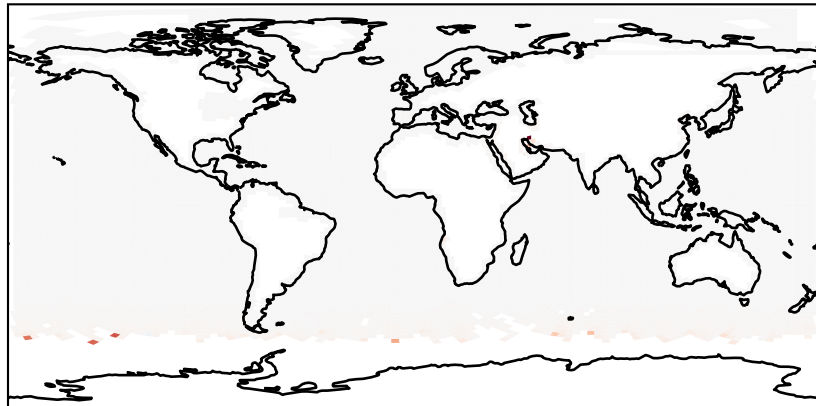
Difference  
Dev - Ref, Dynamic Range



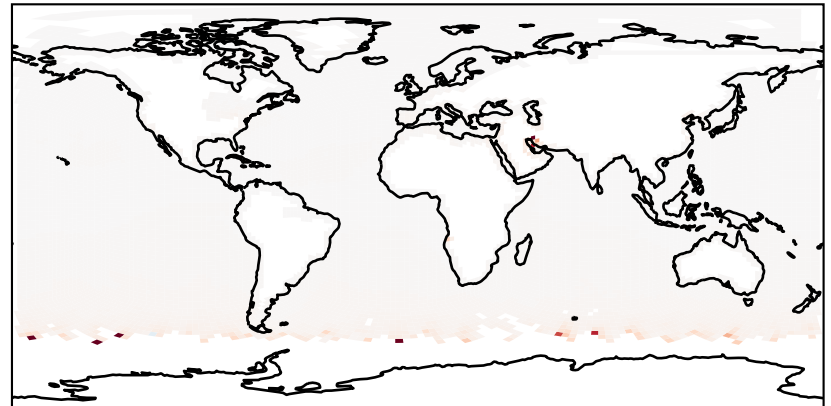
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

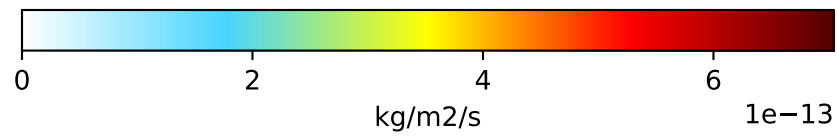
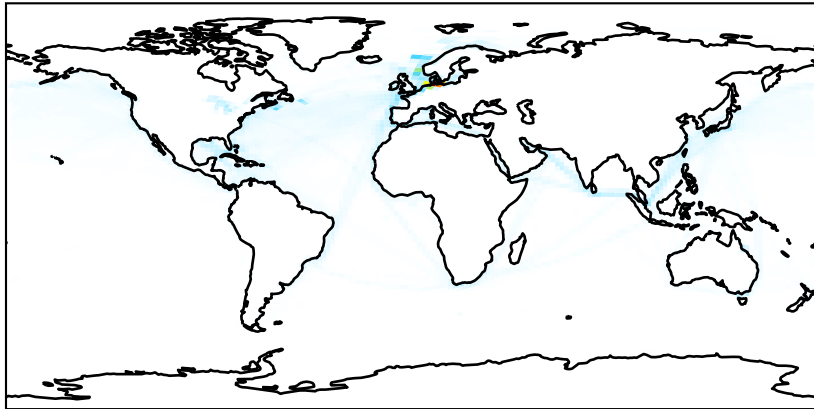


Ratio  
Dev/Ref, Fixed Range

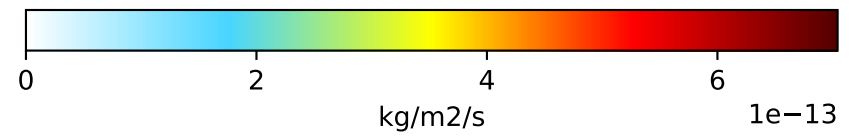
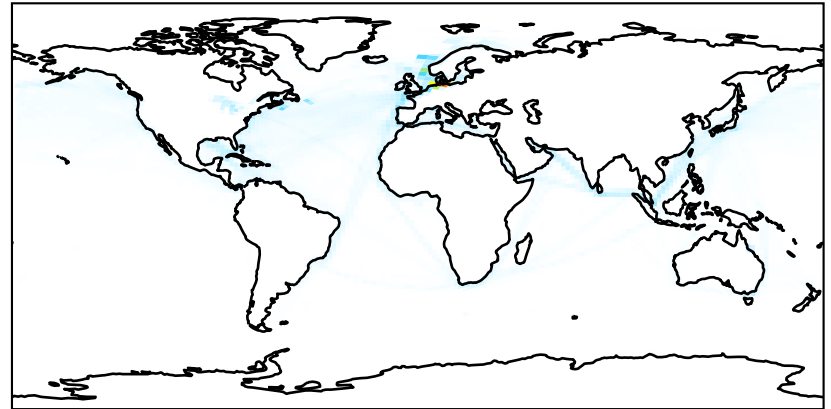


# EmisOCPI\_Ship (Jul2019)

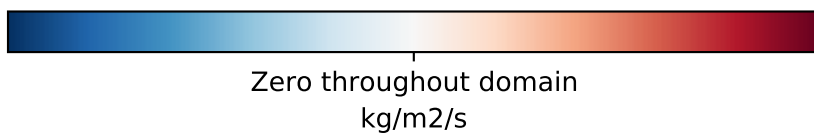
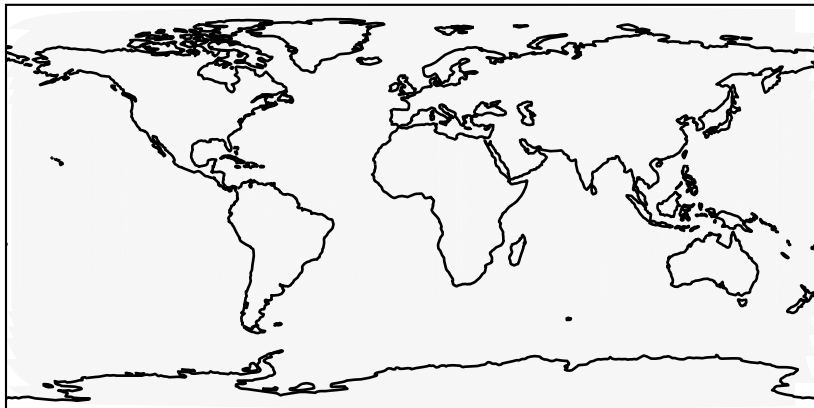
GCHP\_13.0.0-beta.1 (Ref)  
c48



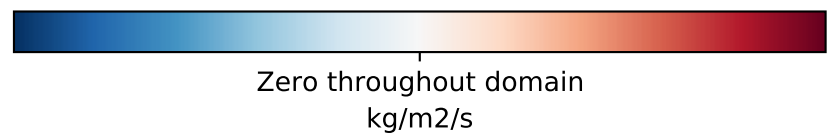
GCHP\_13.0.0-rc.0 (Dev)  
c48



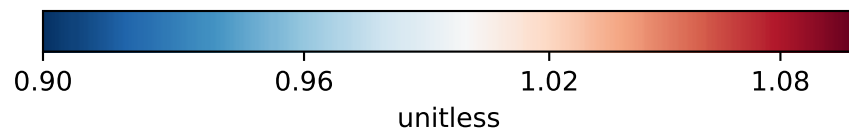
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

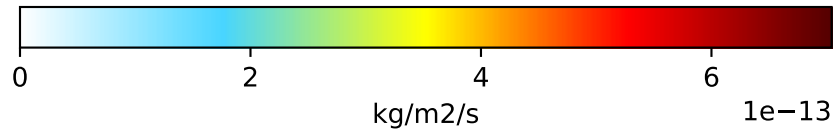


Ratio  
Dev/Ref, Fixed Range

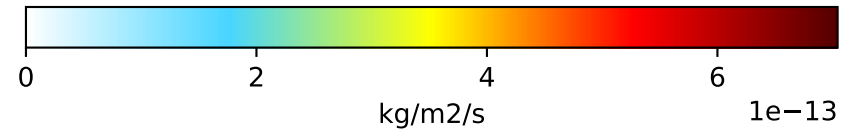
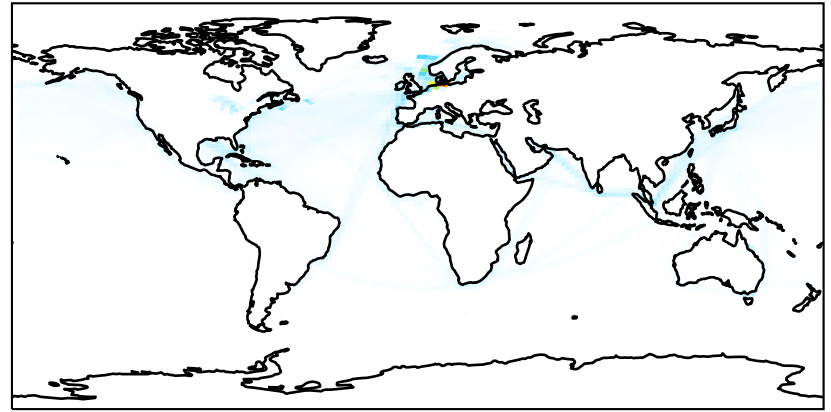


# EmisOCPO\_Ship (Jul2019)

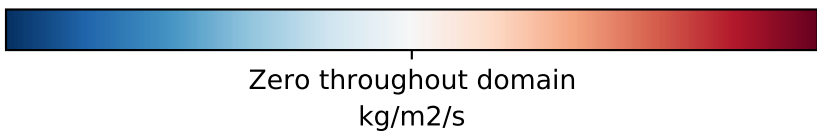
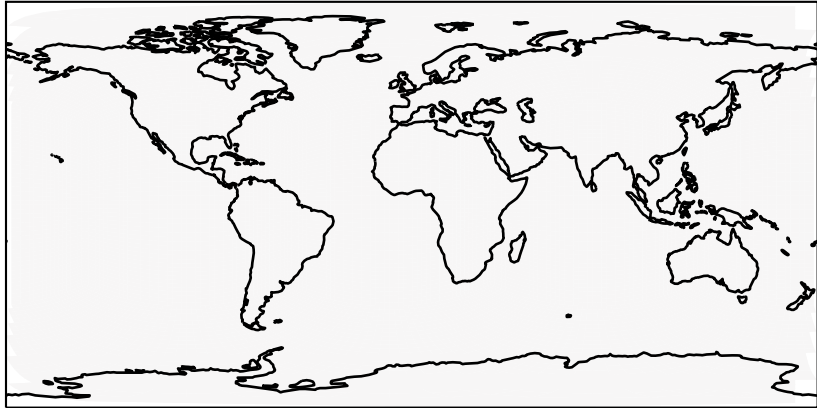
GCHP\_13.0.0-beta.1 (Ref)  
c48



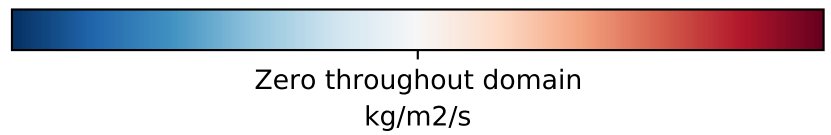
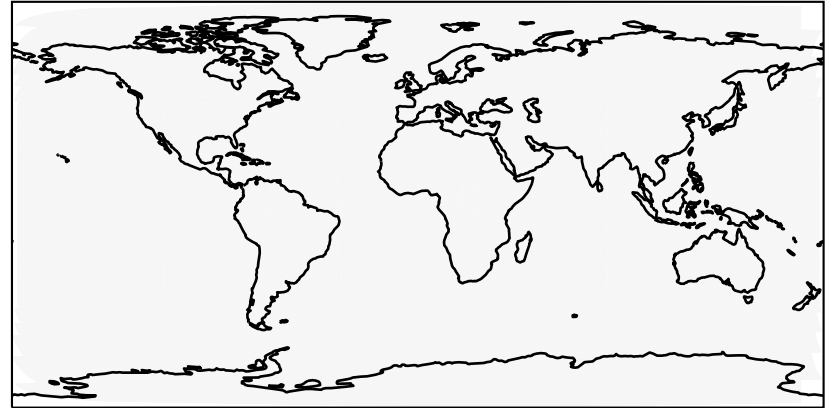
GCHP\_13.0.0-rc.0 (Dev)  
c48



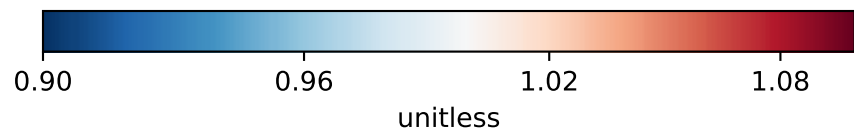
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

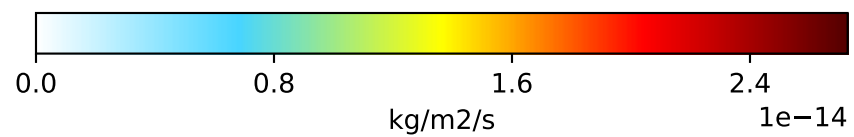
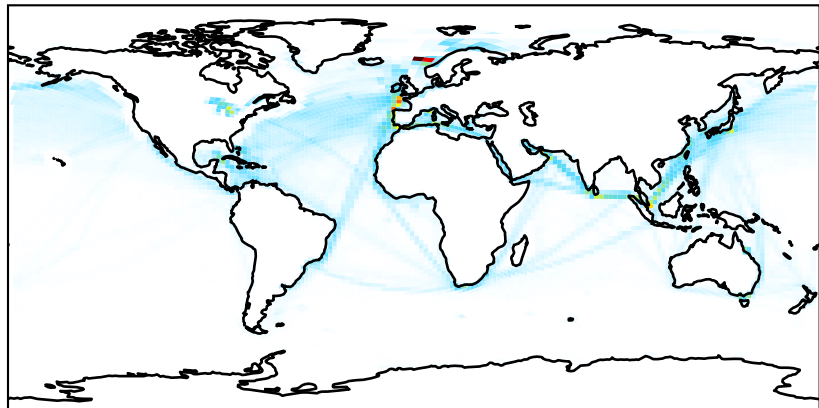


Ratio  
Dev/Ref, Fixed Range

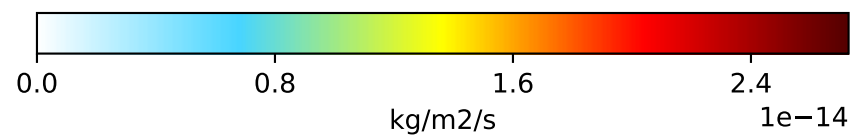
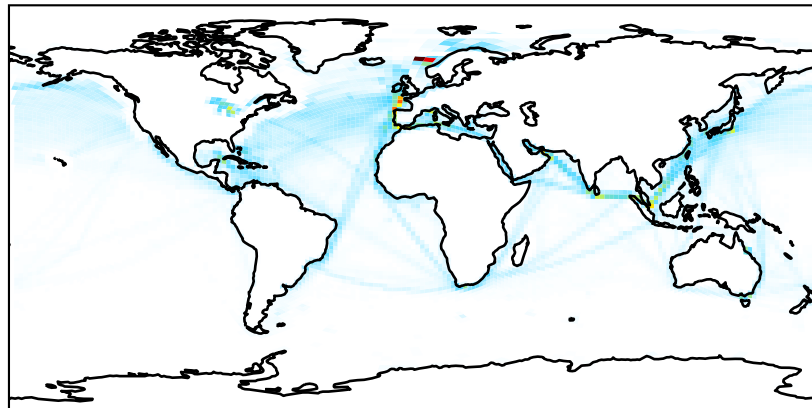


# EmispFe\_Ship (Jul2019)

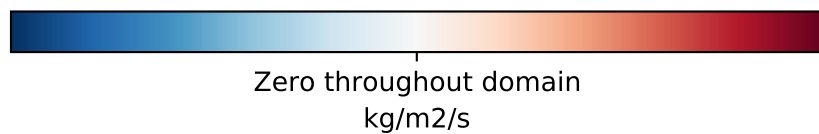
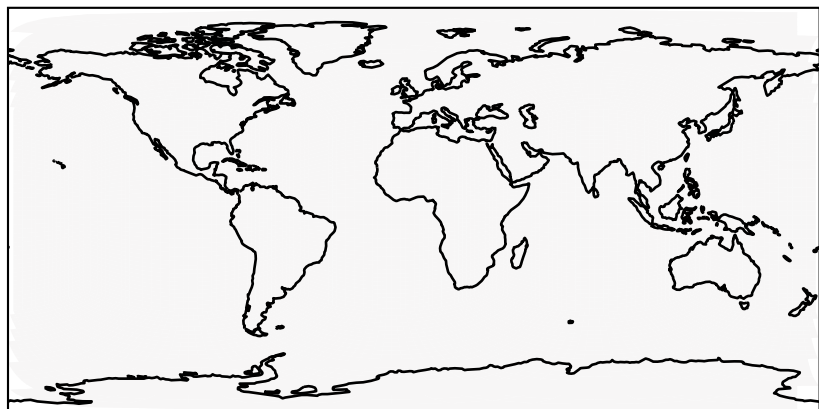
GCHP\_13.0.0-beta.1 (Ref)  
c48



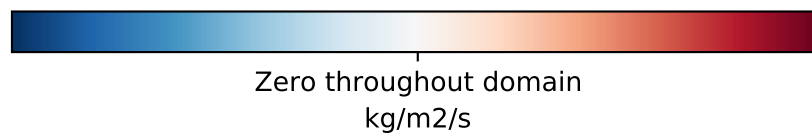
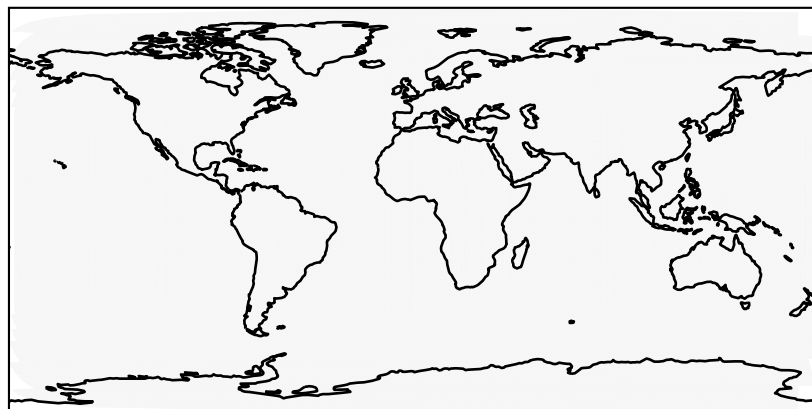
GCHP\_13.0.0-rc.0 (Dev)  
c48



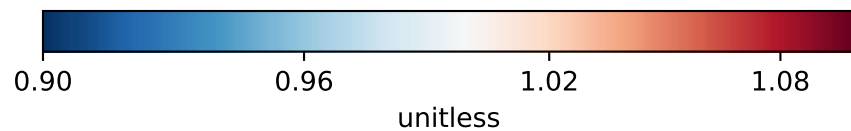
Difference  
Dev - Ref, Dynamic Range



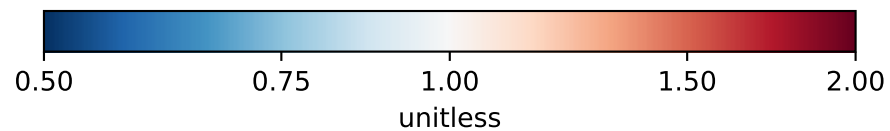
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

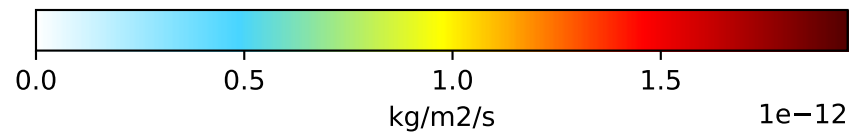
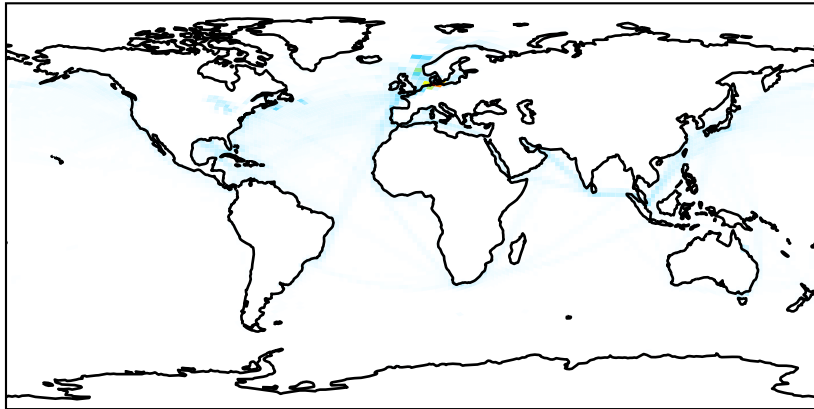


Ratio  
Dev/Ref, Fixed Range

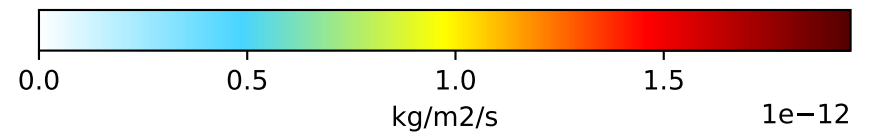


# EmisPRPE\_Ship (Jul2019)

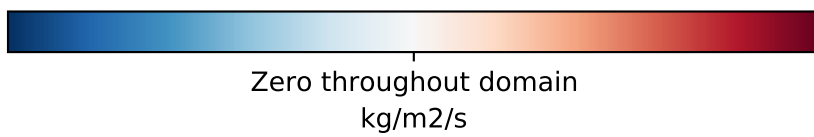
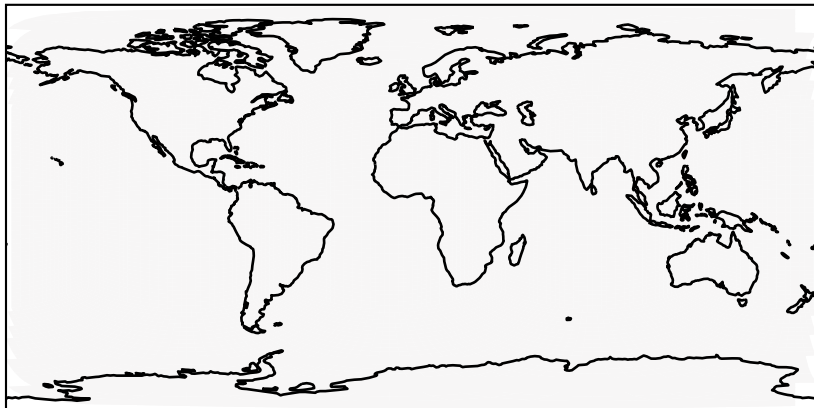
GCHP\_13.0.0-beta.1 (Ref)  
c48



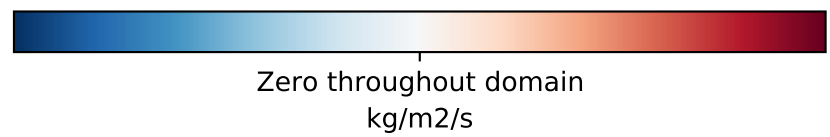
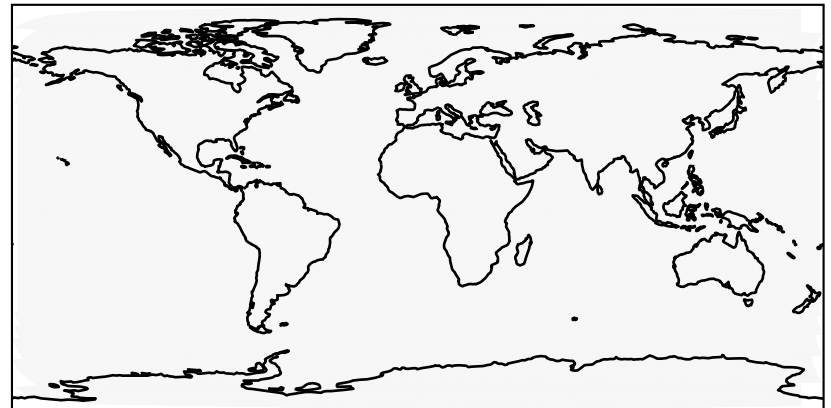
GCHP\_13.0.0-rc.0 (Dev)  
c48



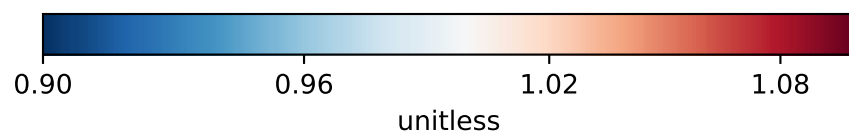
Difference  
Dev - Ref, Dynamic Range



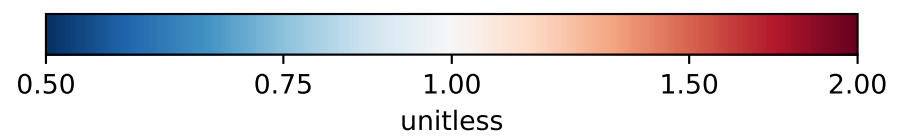
Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

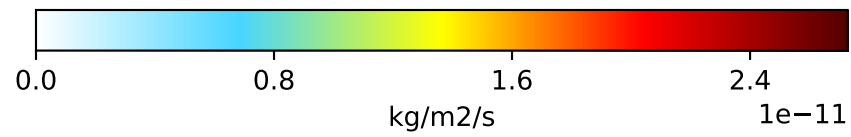
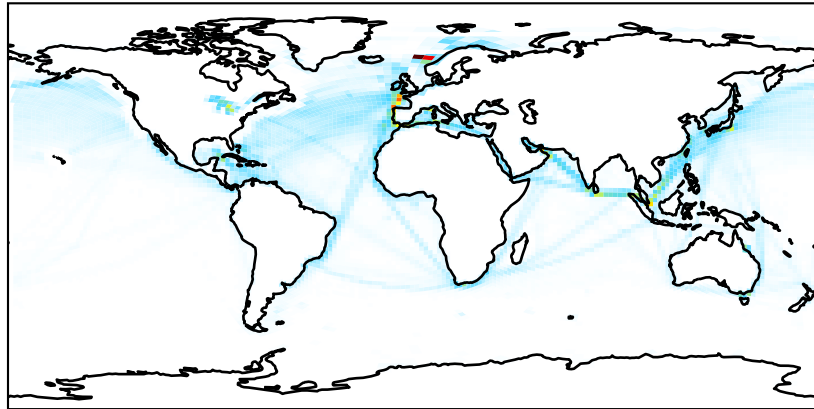


Ratio  
Dev/Ref, Fixed Range

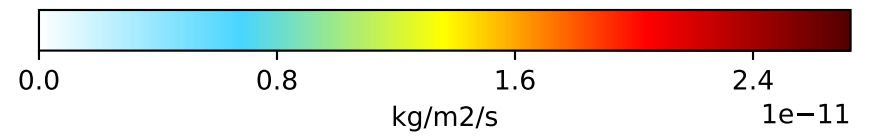
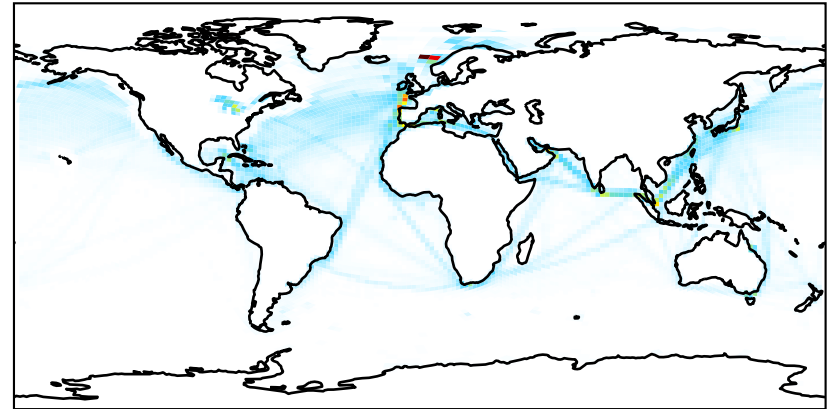


# EmisSO2\_Ship (Jul2019)

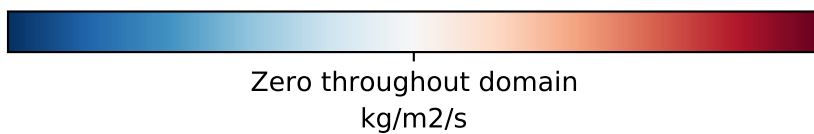
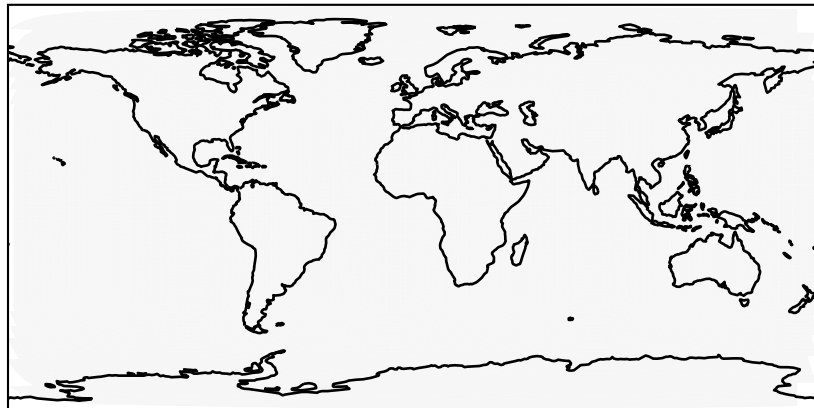
GCHP\_13.0.0-beta.1 (Ref)  
c48



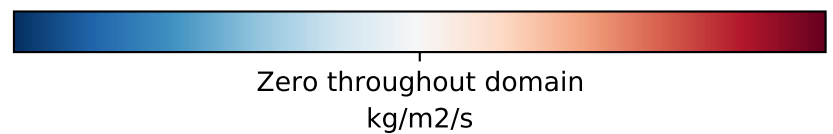
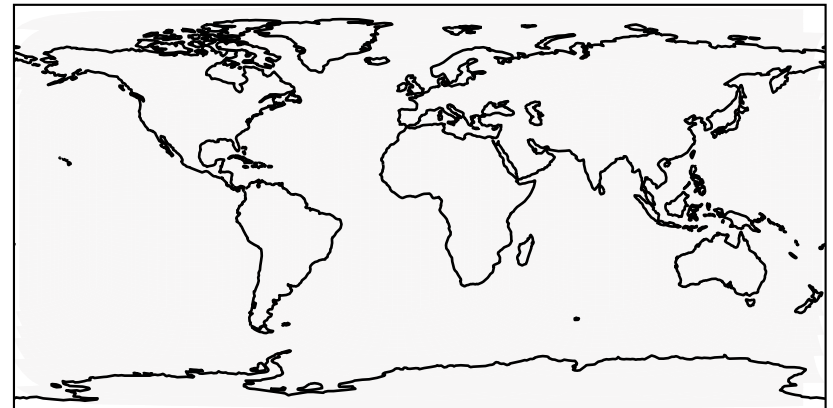
GCHP\_13.0.0-rc.0 (Dev)  
c48



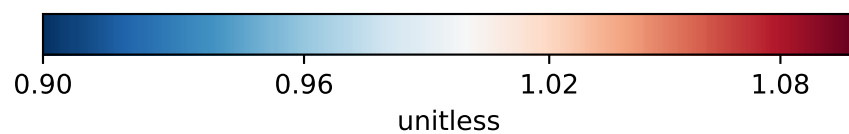
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range



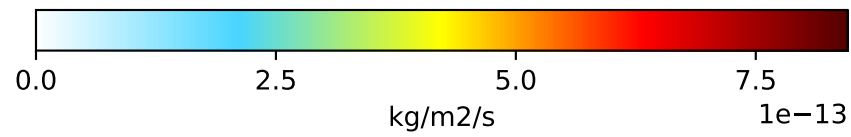
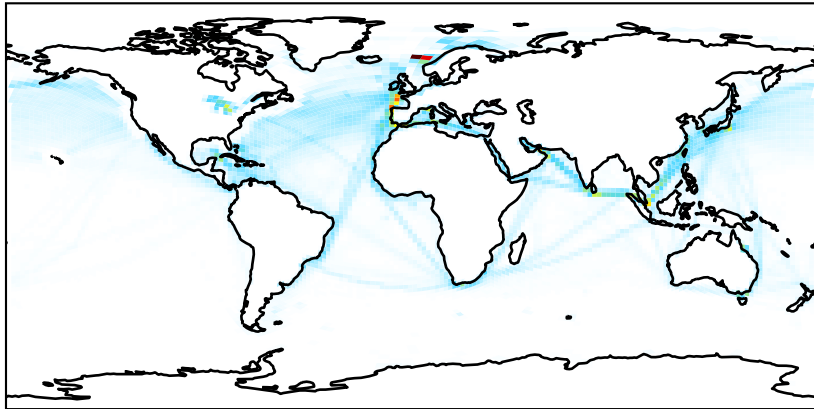
Ratio  
Dev/Ref, Fixed Range



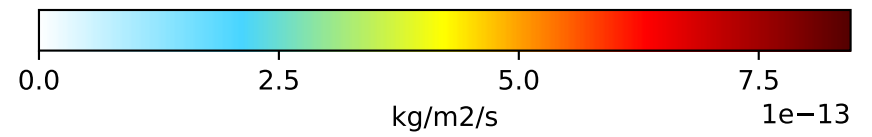
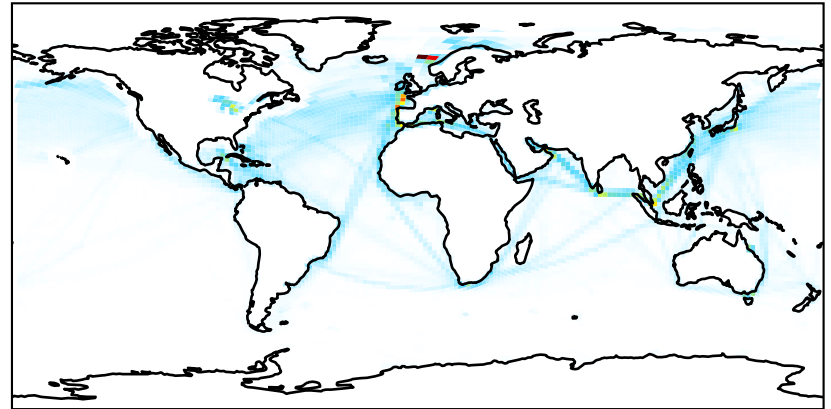


# EmisSO4\_Ship (Jul2019)

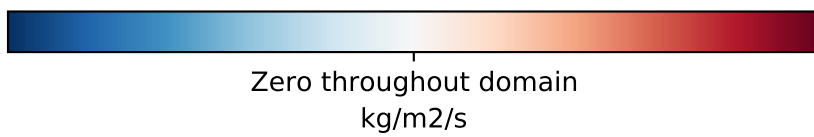
GCHP\_13.0.0-beta.1 (Ref)  
c48



GCHP\_13.0.0-rc.0 (Dev)  
c48



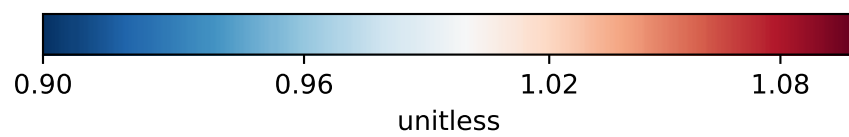
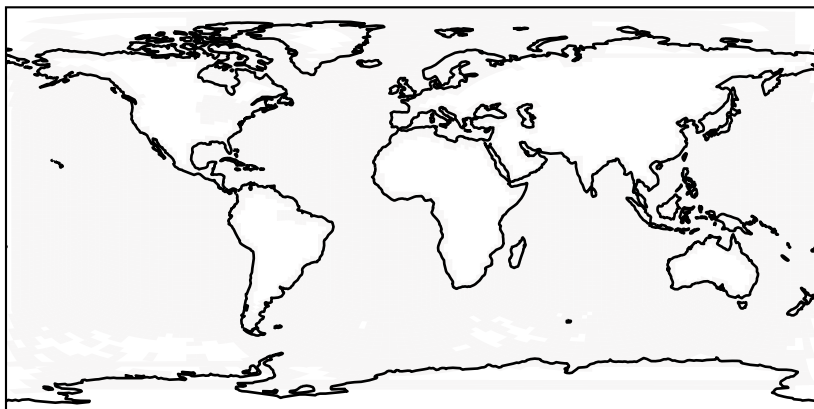
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

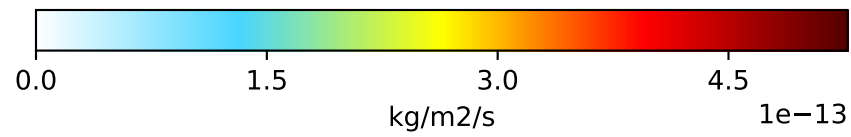
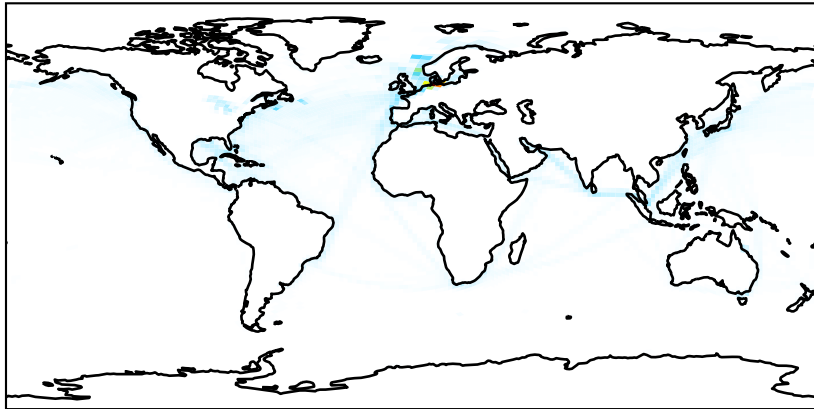


Ratio  
Dev/Ref, Fixed Range

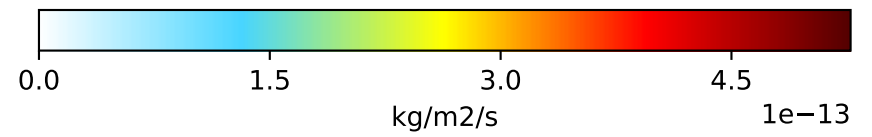
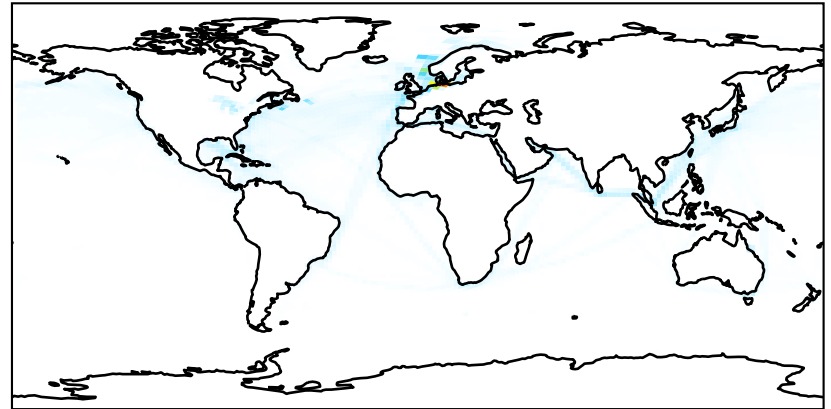


# EmisSOAP\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



GCHP\_13.0.0-rc.0 (Dev)  
c48



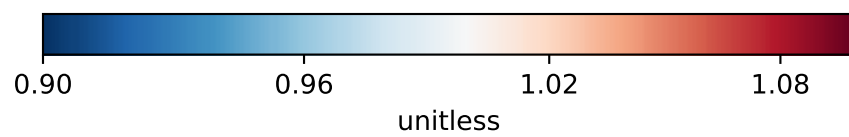
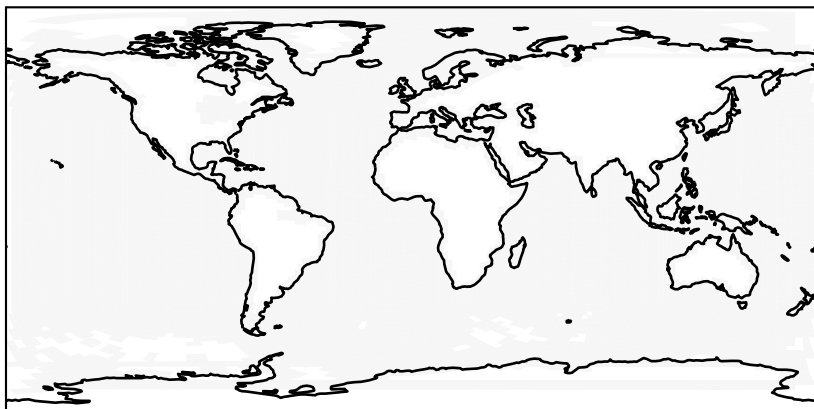
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

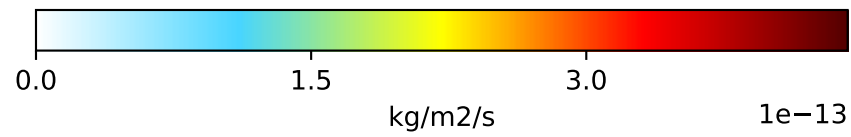
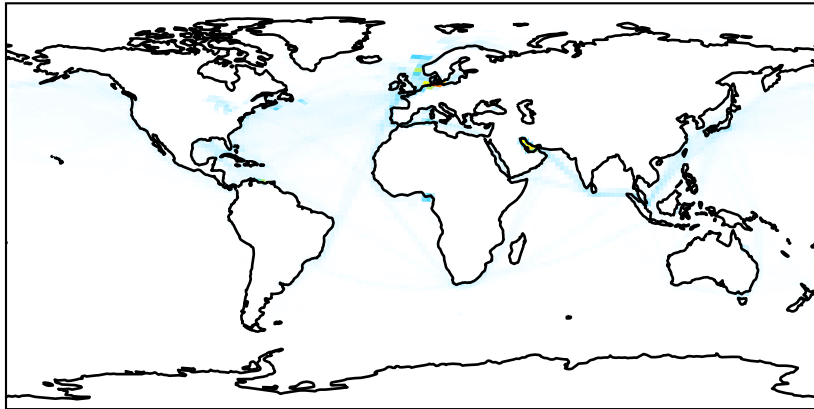


Ratio  
Dev/Ref, Fixed Range

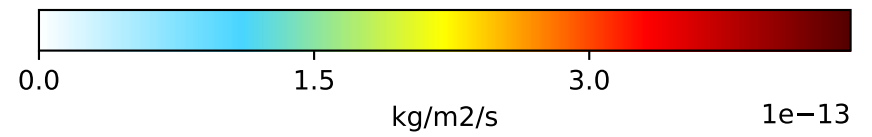
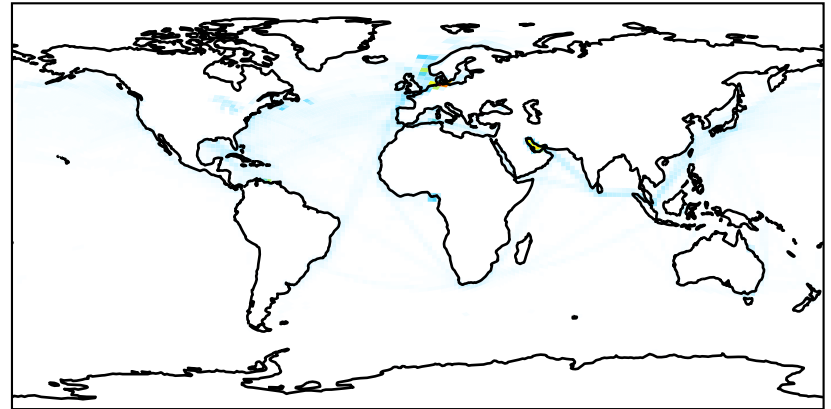


# EmisTOLU\_Ship (Jul2019)

GCHP\_13.0.0-beta.1 (Ref)  
c48



GCHP\_13.0.0-rc.0 (Dev)  
c48



Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range

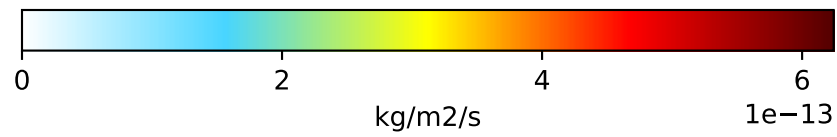
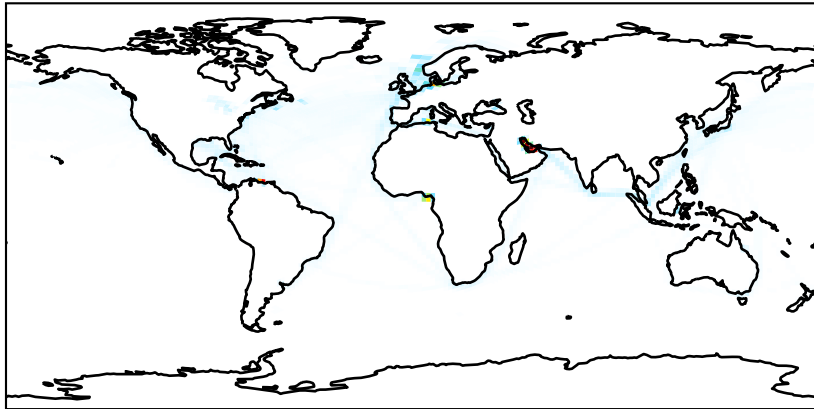


Ratio  
Dev/Ref, Fixed Range

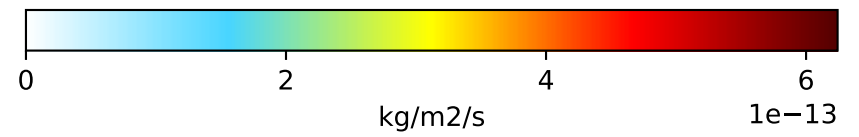
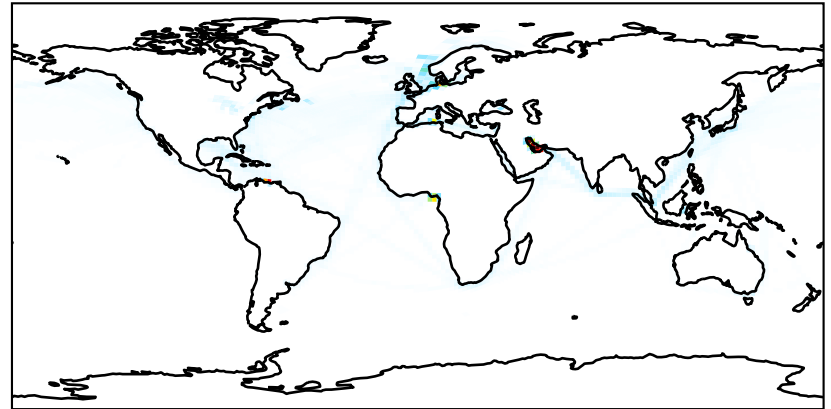


# EmisXYLE\_Ship (Jul2019)

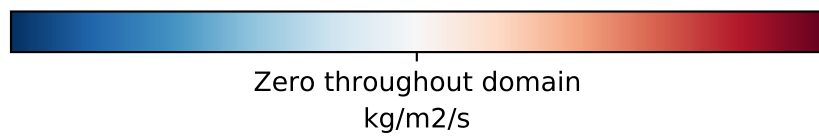
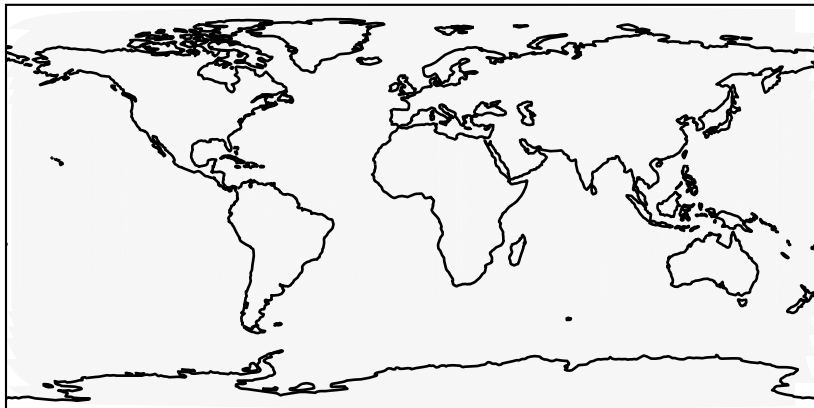
GCHP\_13.0.0-beta.1 (Ref)  
c48



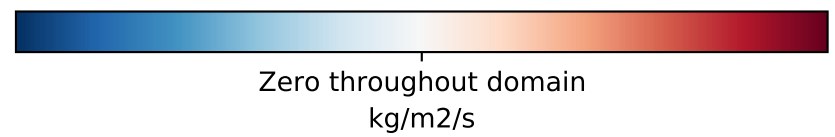
GCHP\_13.0.0-rc.0 (Dev)  
c48



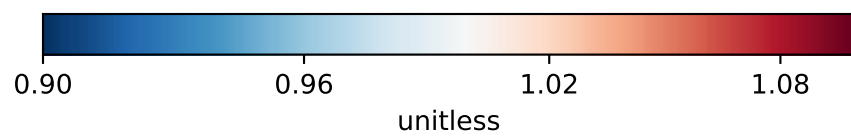
Difference  
Dev - Ref, Dynamic Range



Difference  
Dev - Ref, Restricted Range [5%,95%]



Ratio  
Dev/Ref, Dynamic Range



Ratio  
Dev/Ref, Fixed Range

