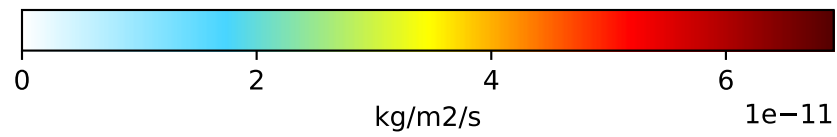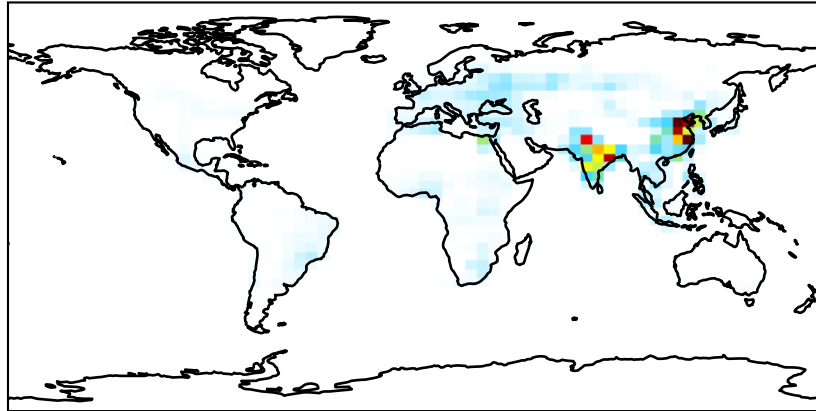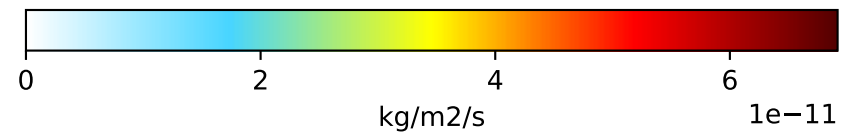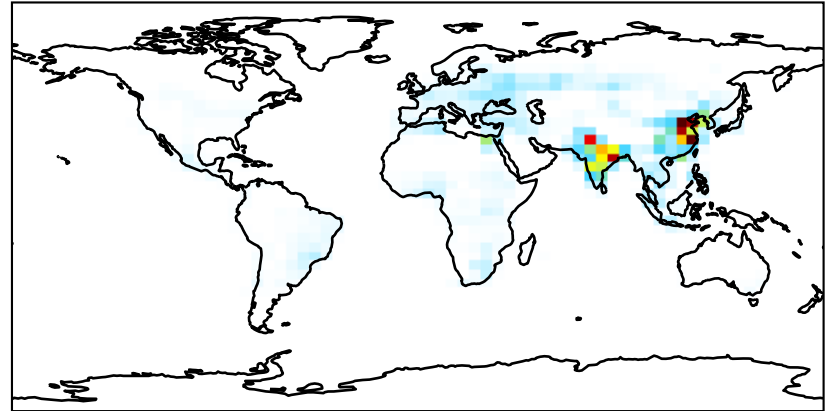# EmisDST1_Anthro (Apr2019)

## GCC_14.0.0 (Ref)
### 4.0x5.0



kg/m2/s

## GCC_14.2.0 (Dev)
### 4.0x5.0



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



Ref and Dev equal throughout domain
unitless

## Ratio
### Dev/Ref, Fixed Range



Ref and Dev equal throughout domain
unitless

# EmisDST1_Natural (Apr2019)
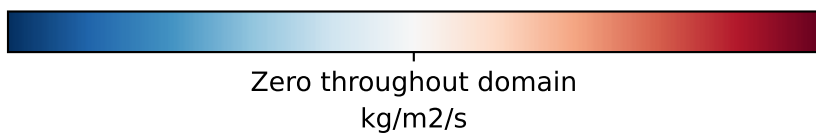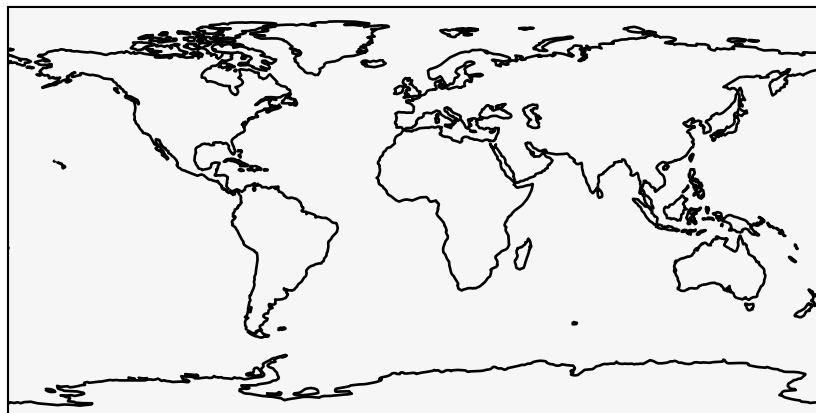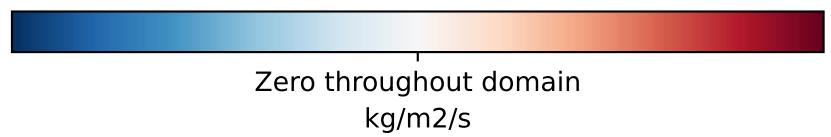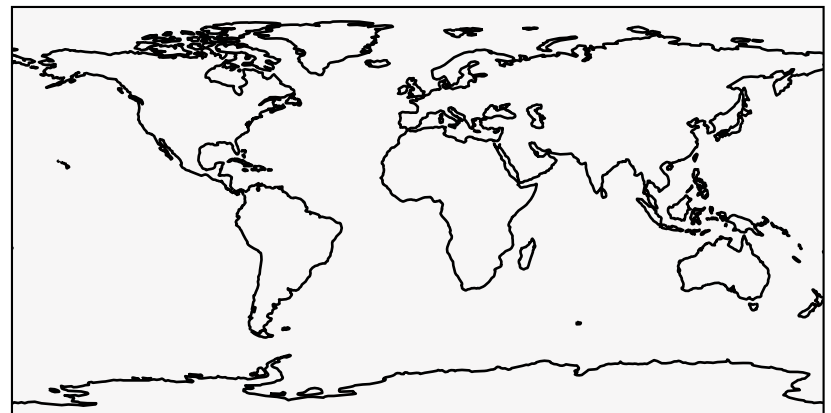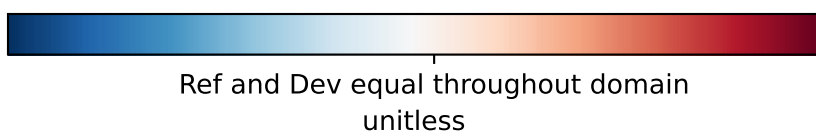


GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s
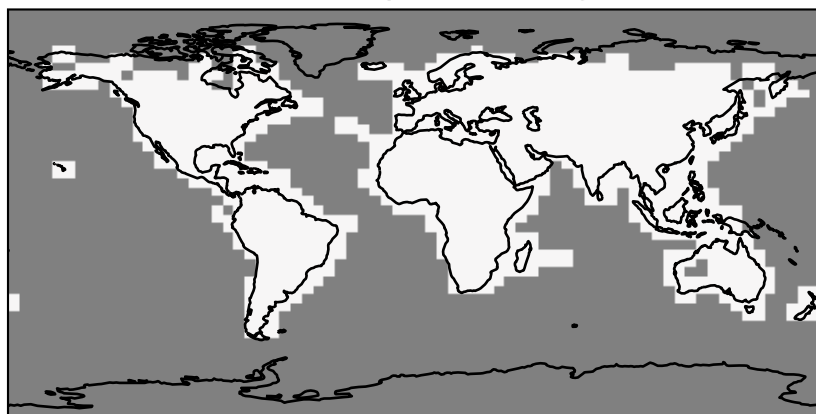
kg/m2/s

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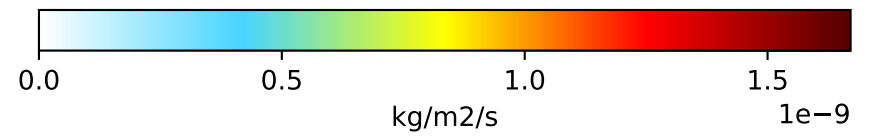
Difference
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

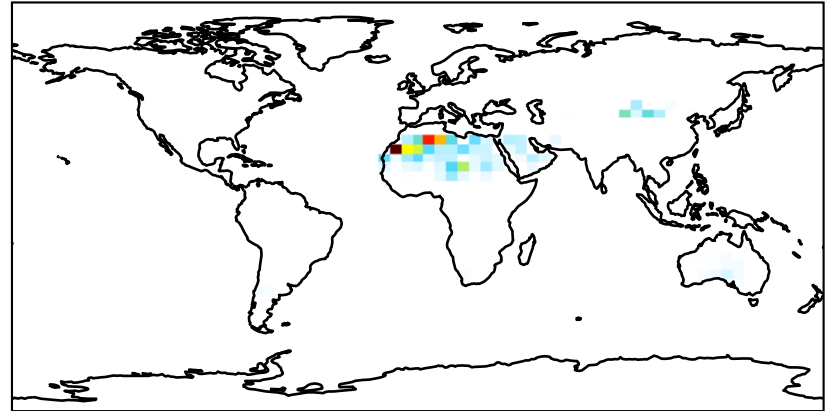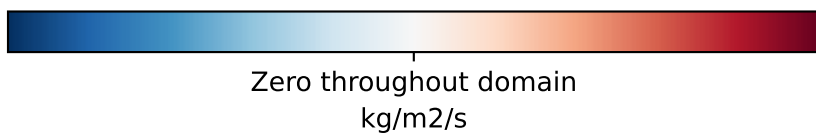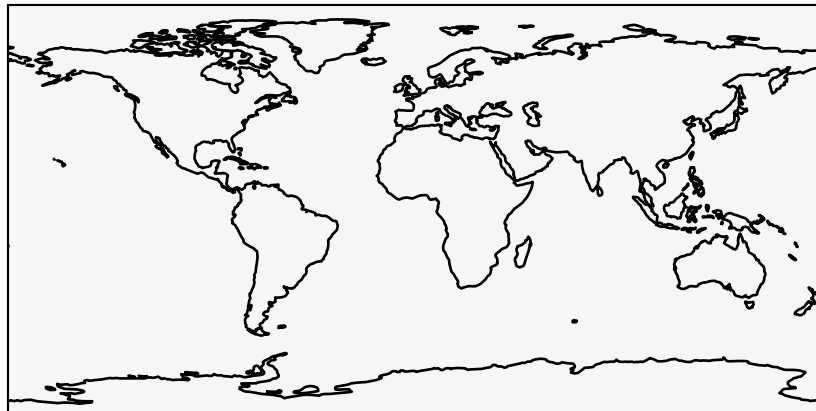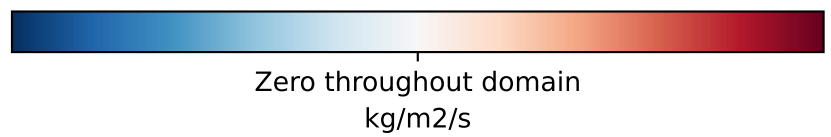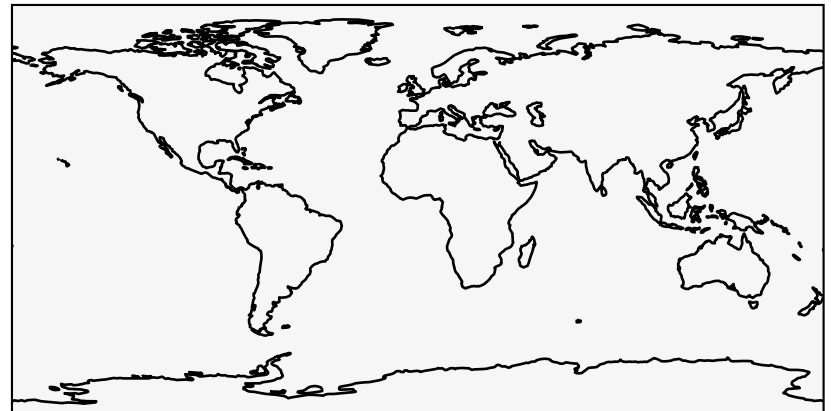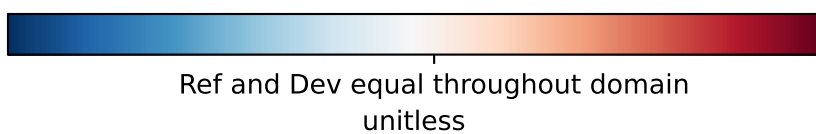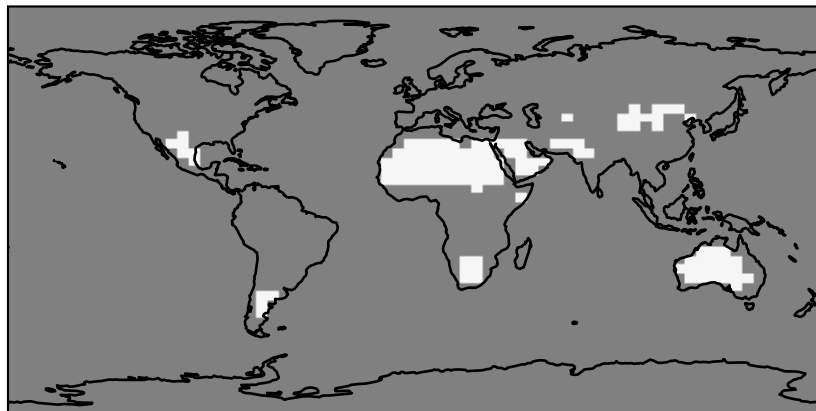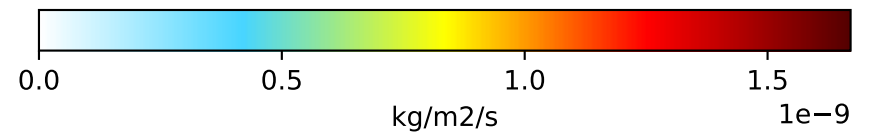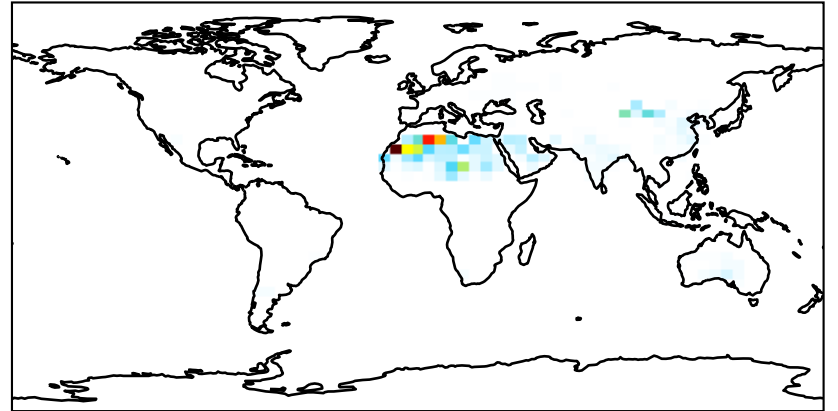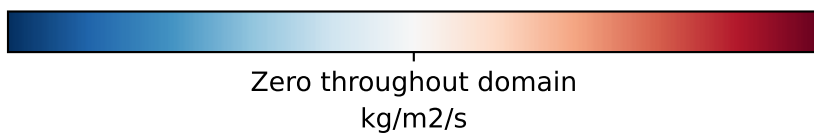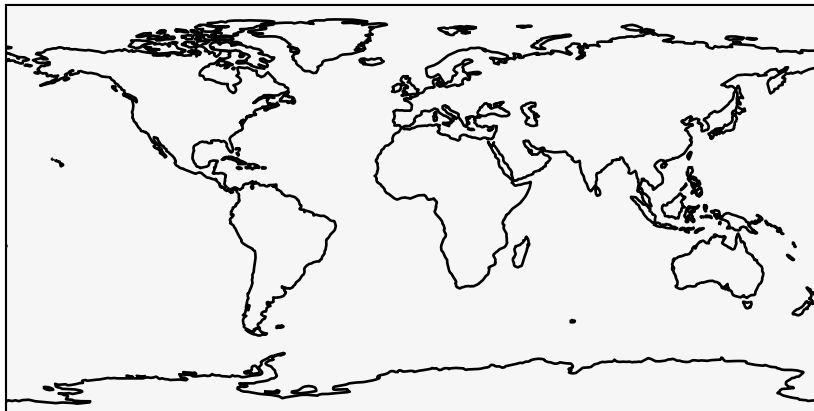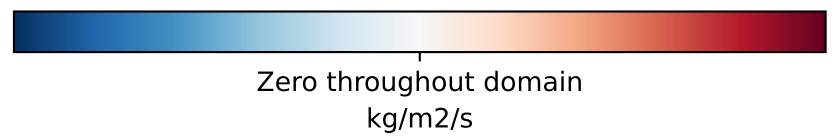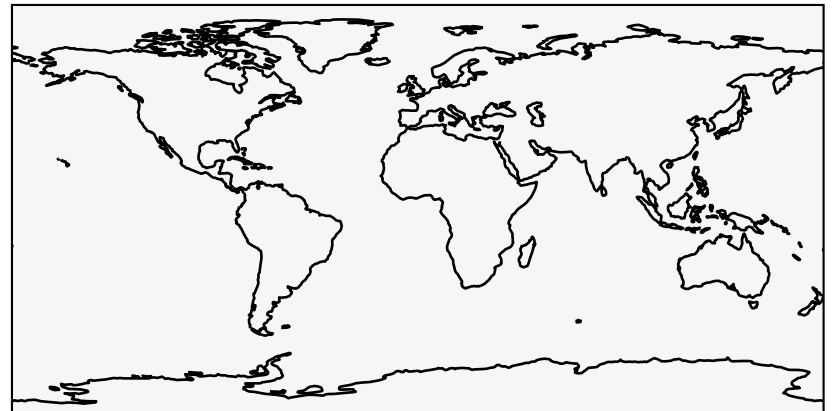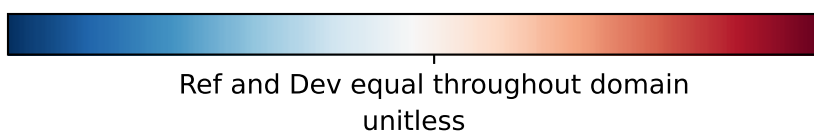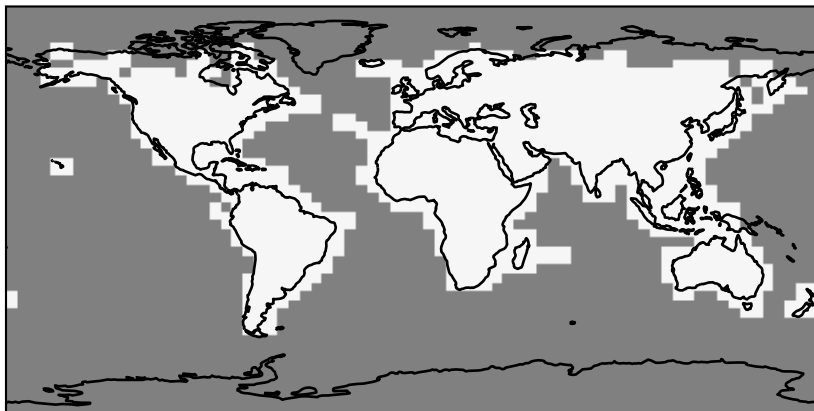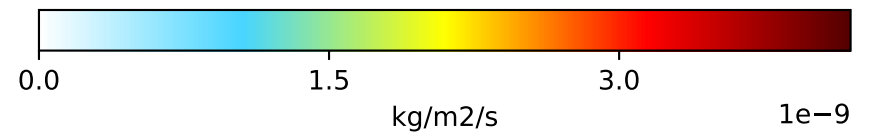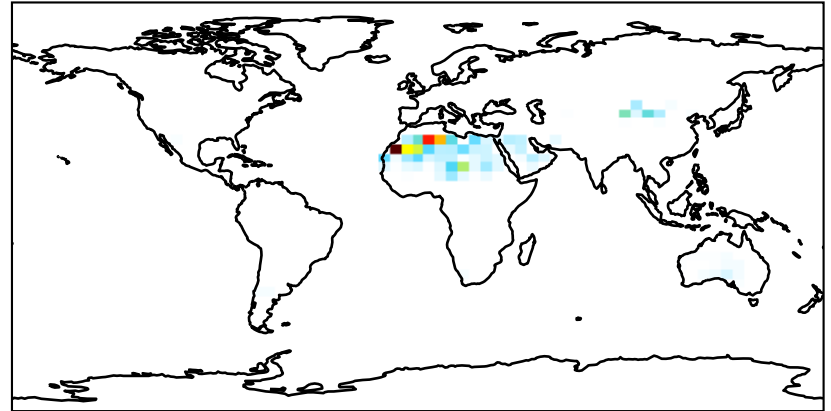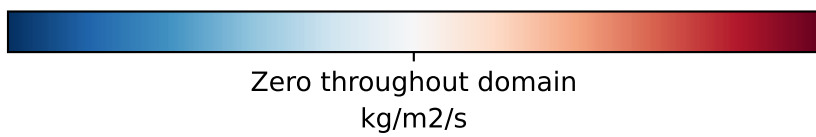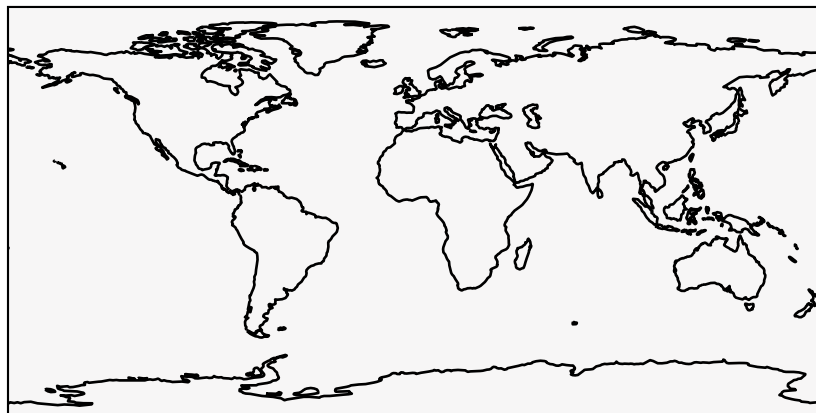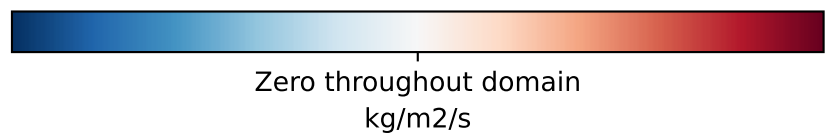Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

# EmisDST1_Total (Apr2019)

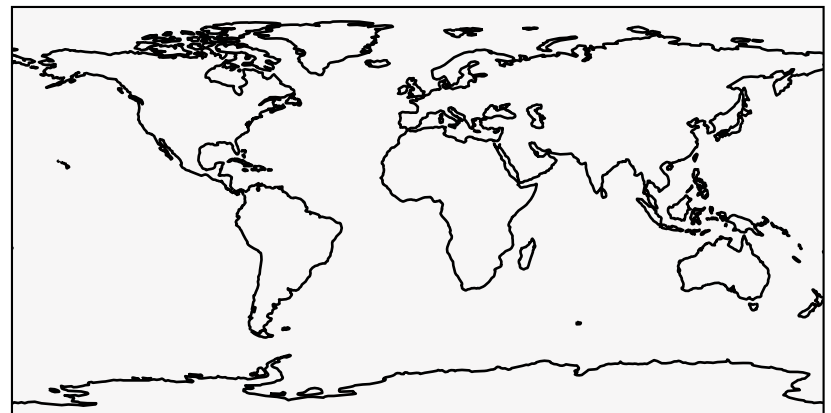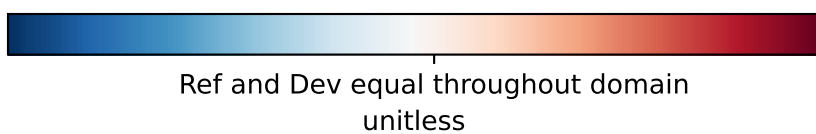EmisDST2_Natural (Apr2019)

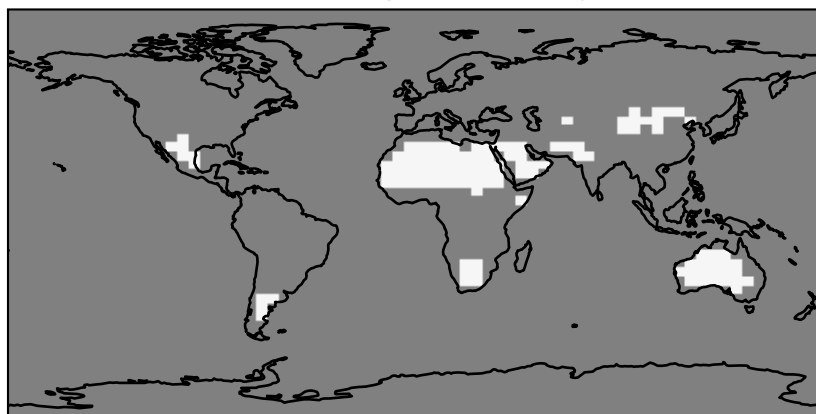# EmisDST3_Natural (Apr2019)



GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

kg/m2/s

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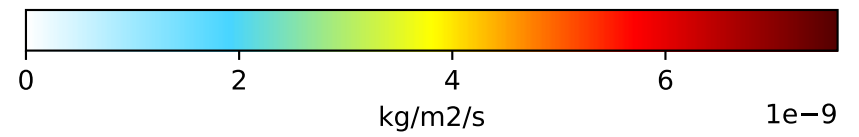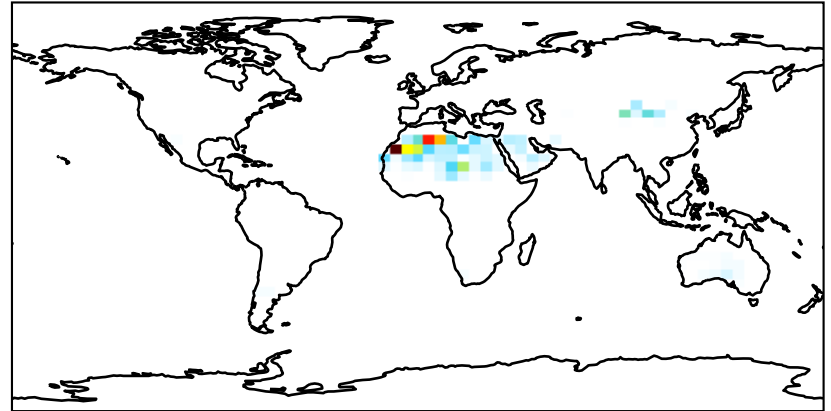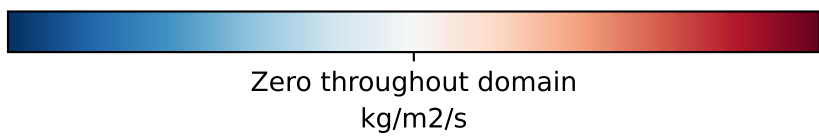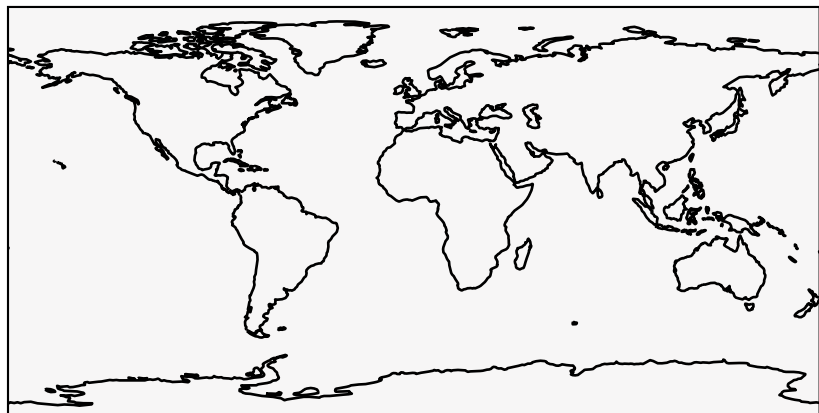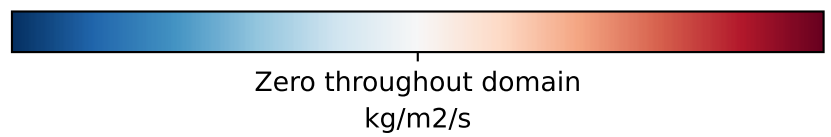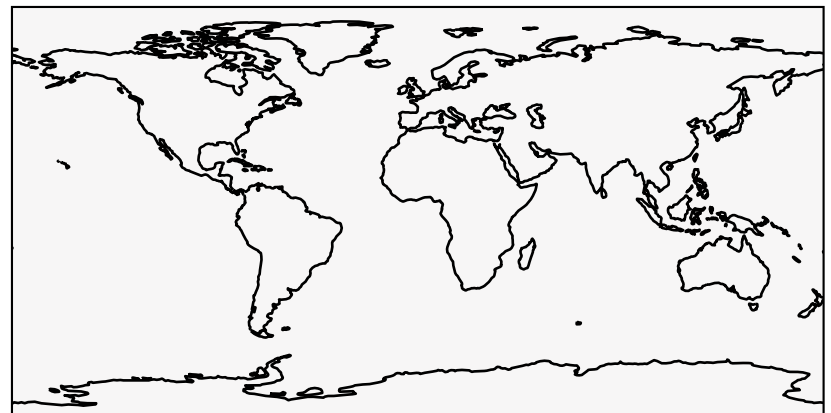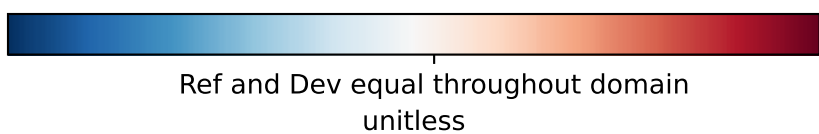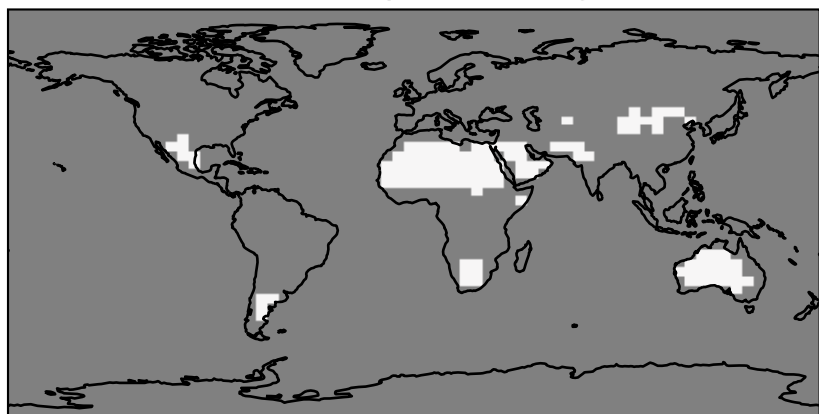
Difference
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

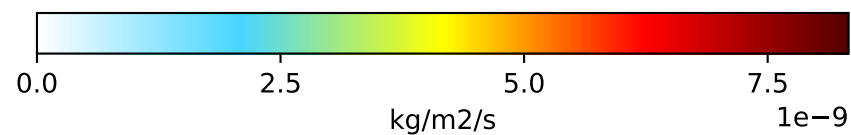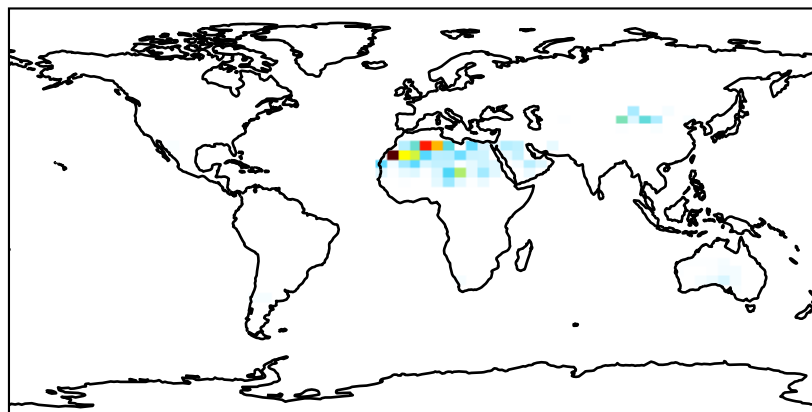Ref and Dev equal throughout domain
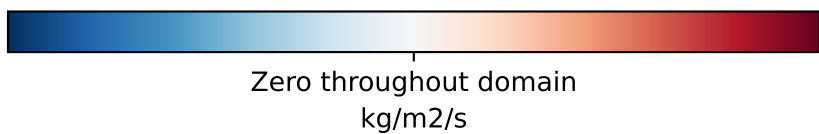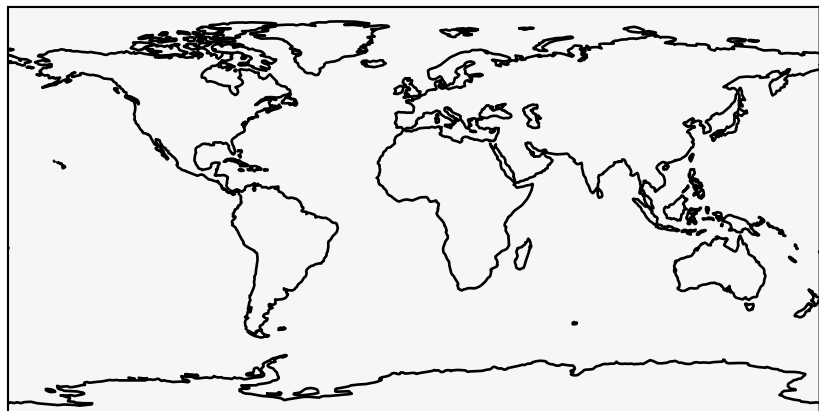unitless

Ref and Dev equal throughout domain
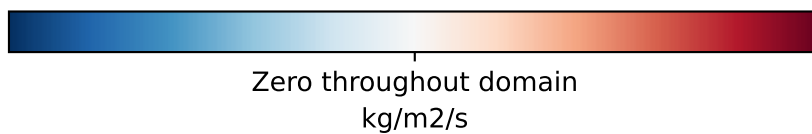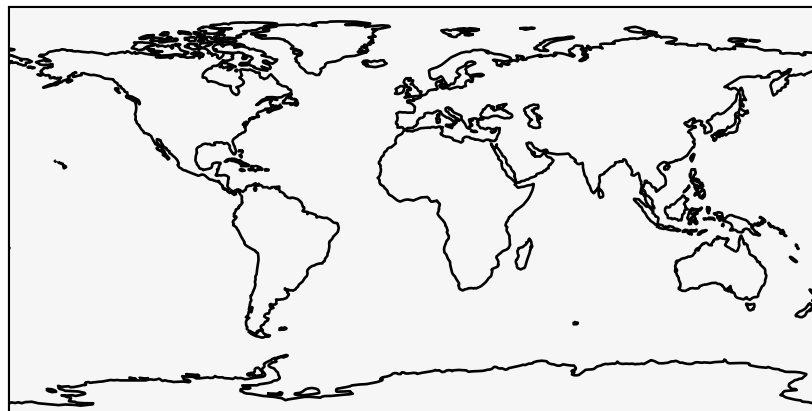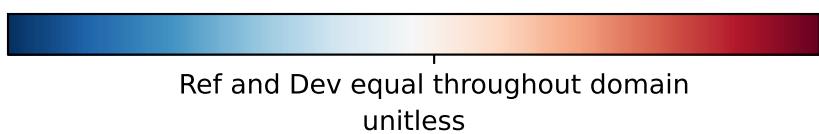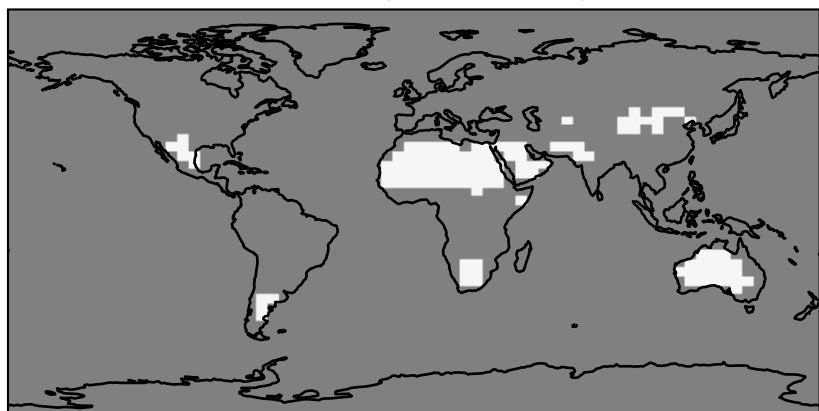unitless

# EmisDST4_Natural (Apr2019)



GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
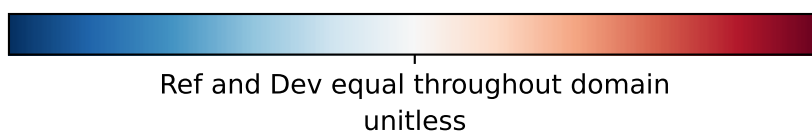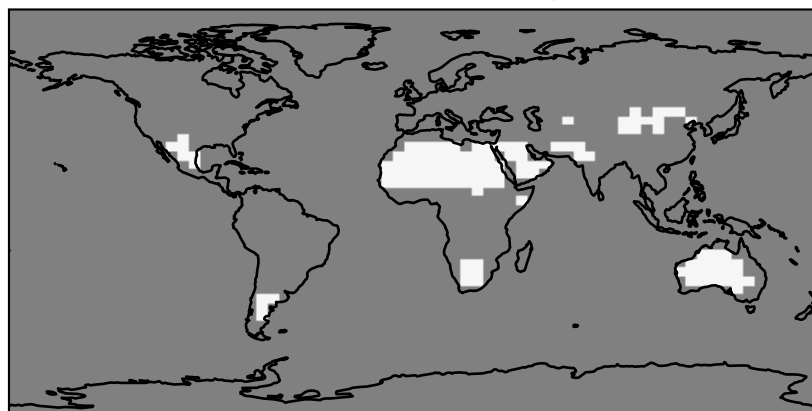4.0x5.0

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless
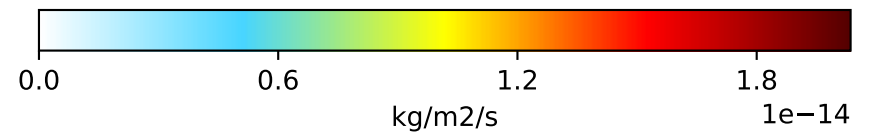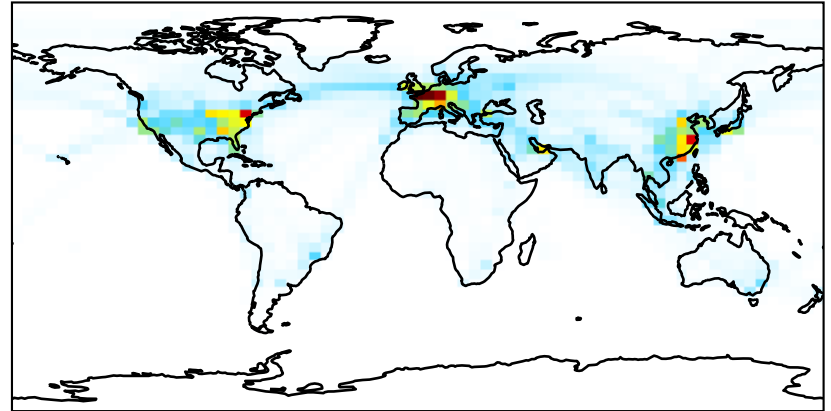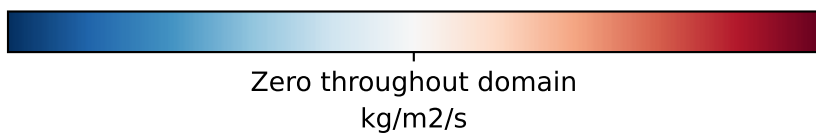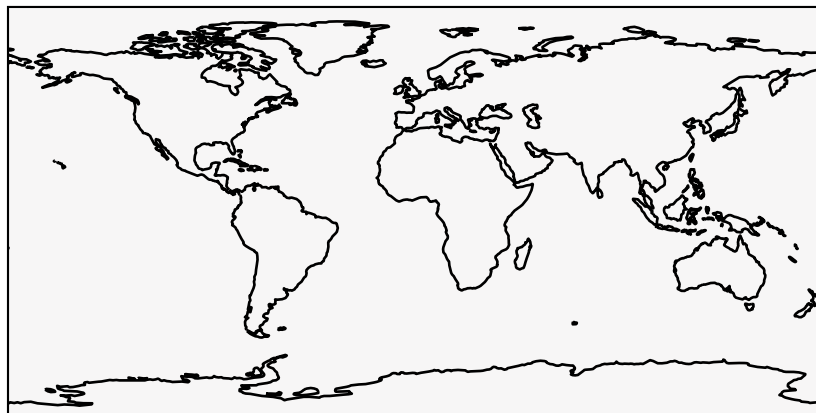
# EmisSO4_Aircraft (Apr2019)



GCC_14.0.0 (Ref)
4.0x5.0

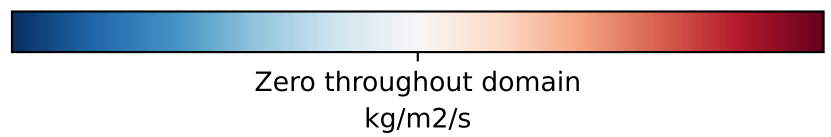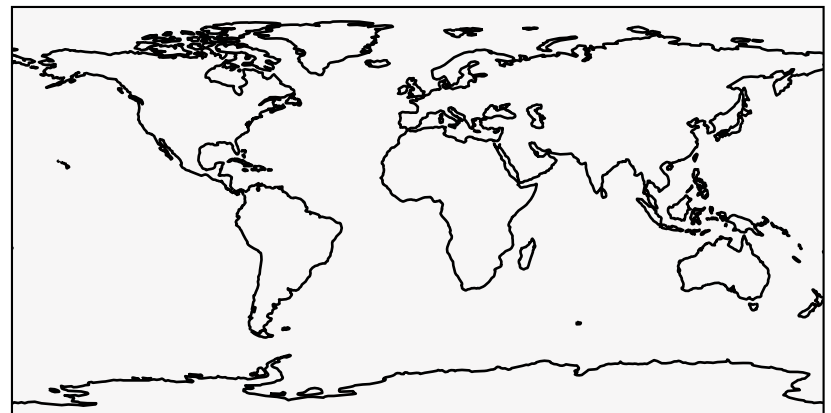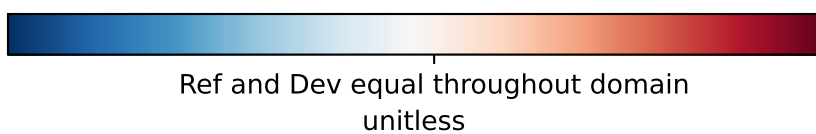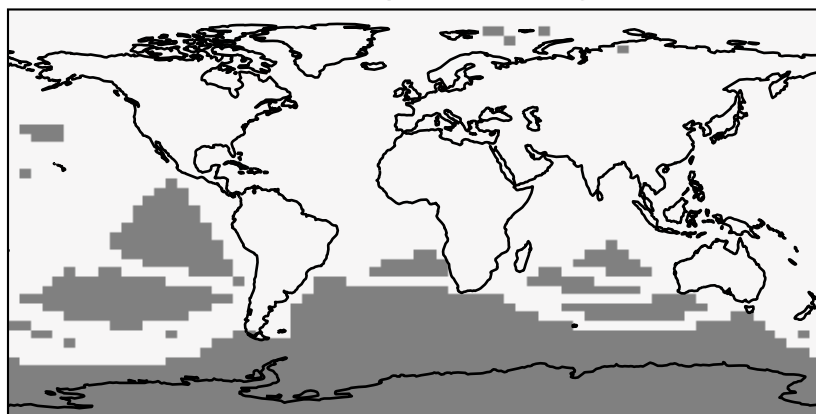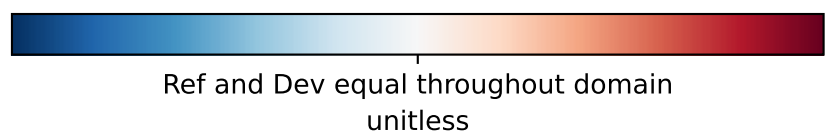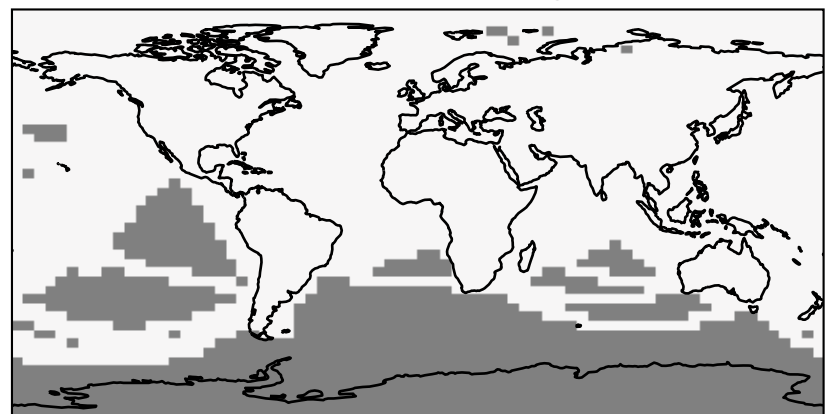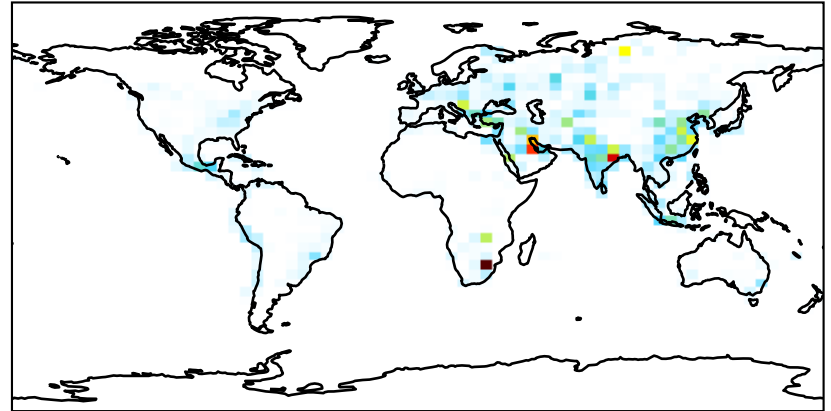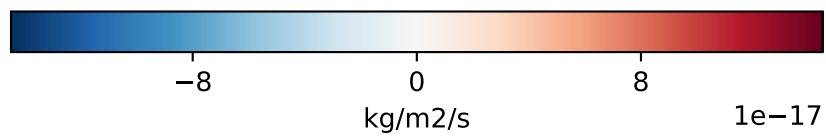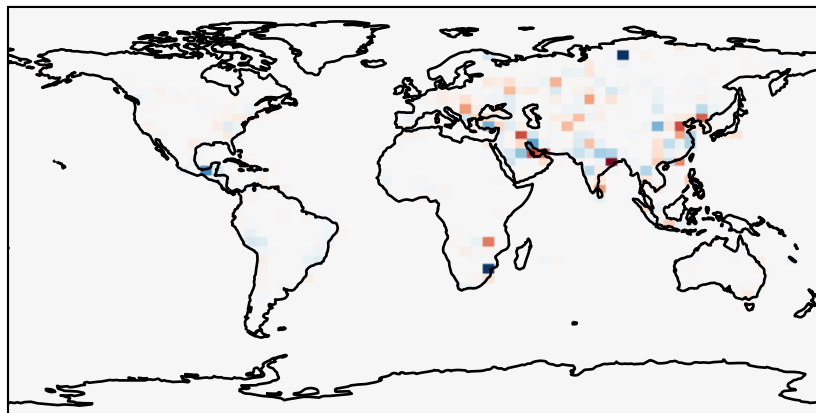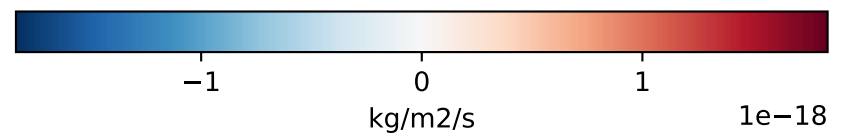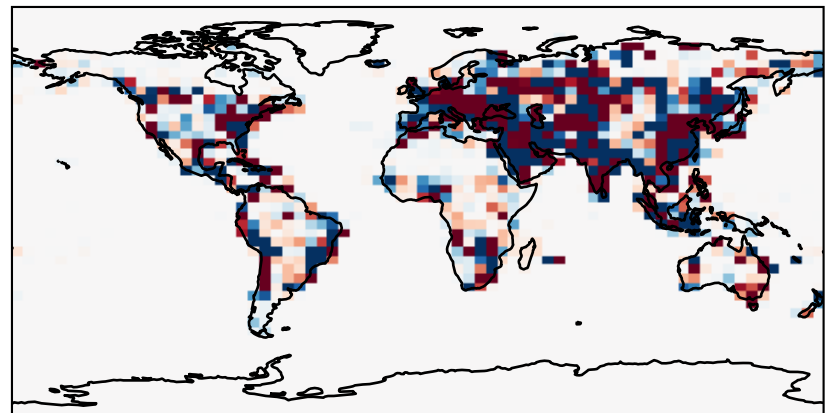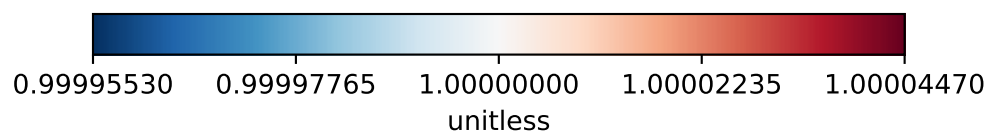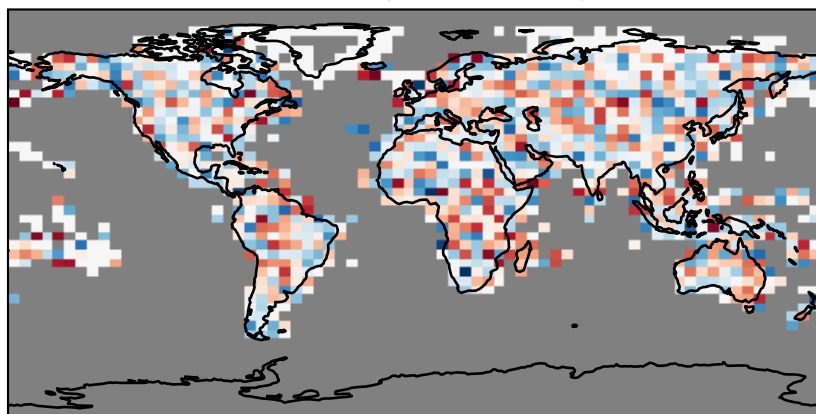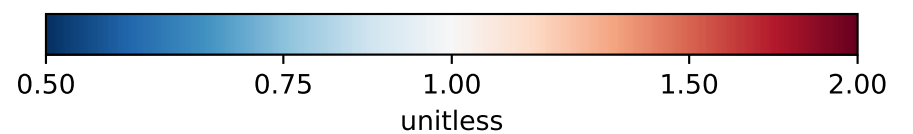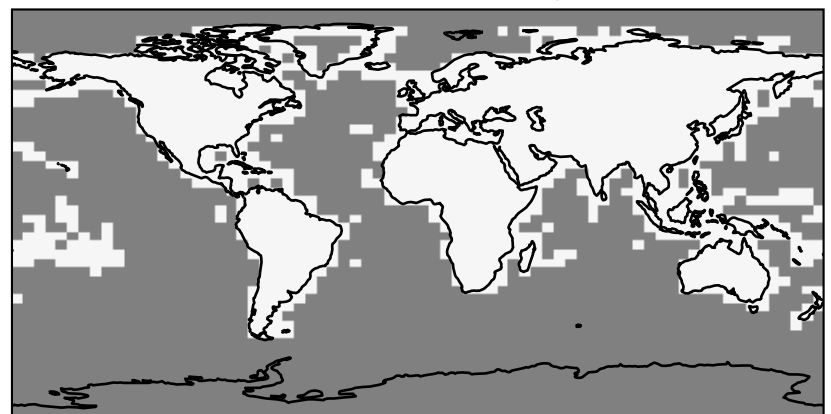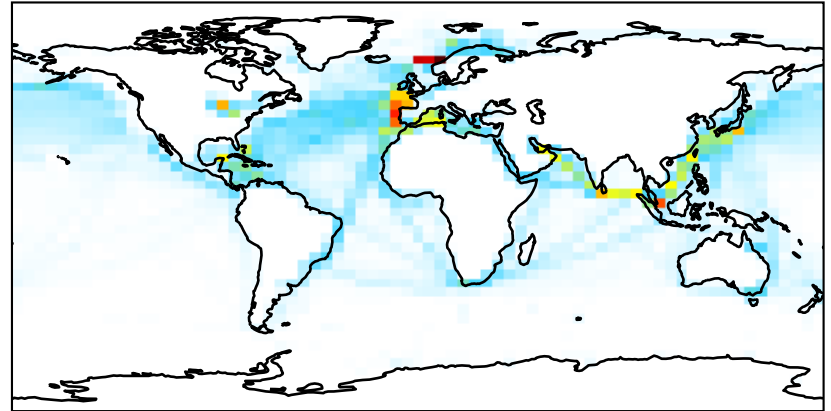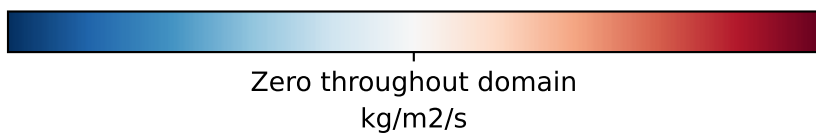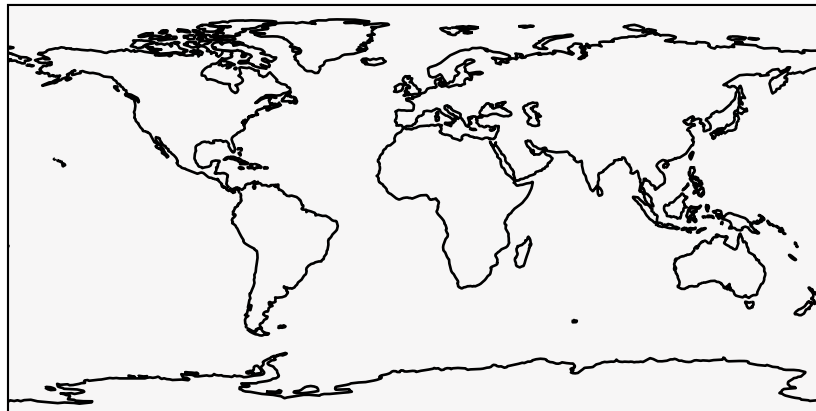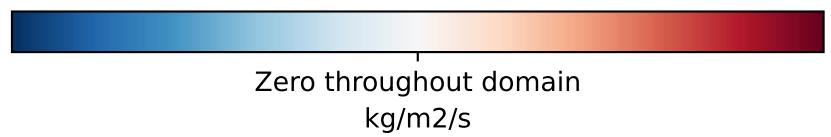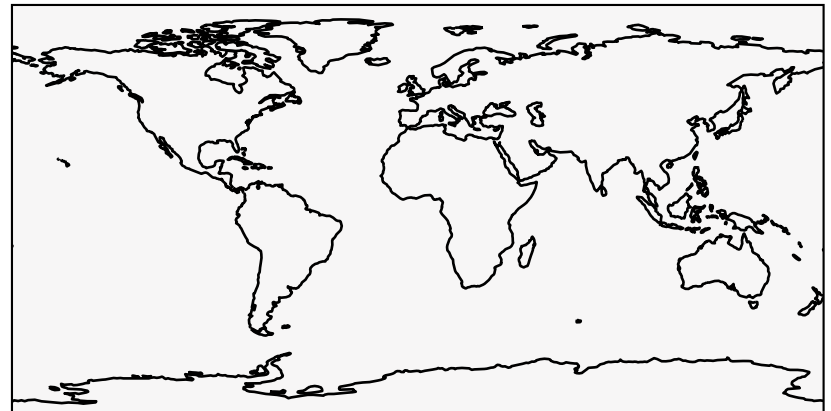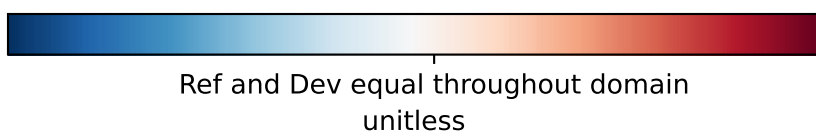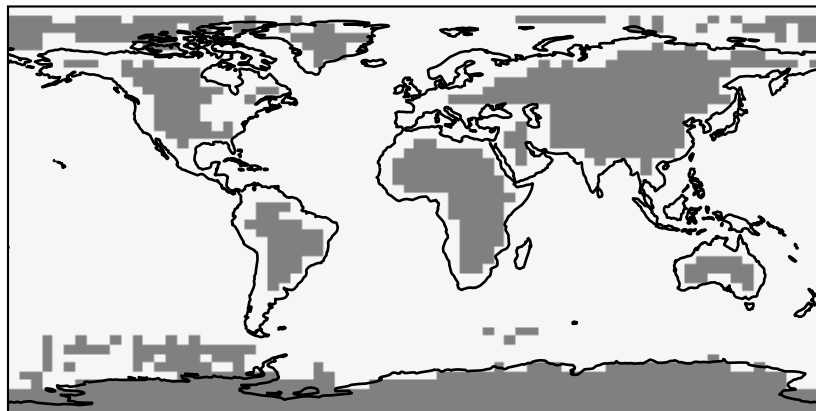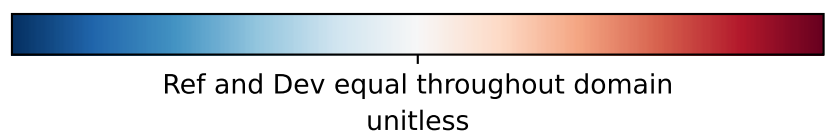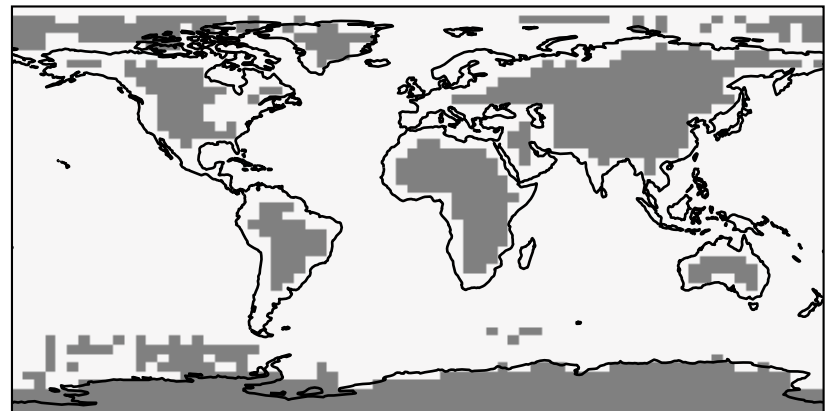GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
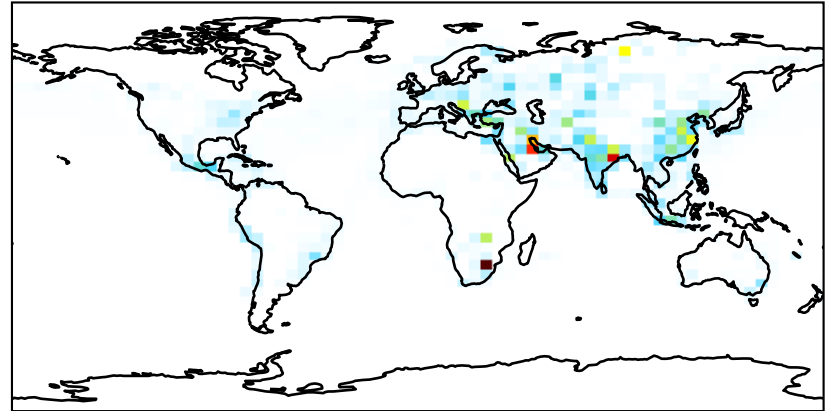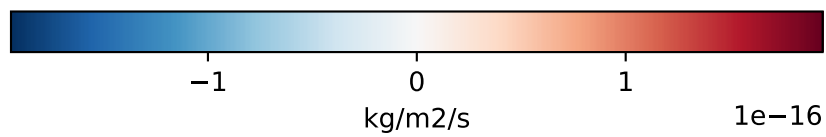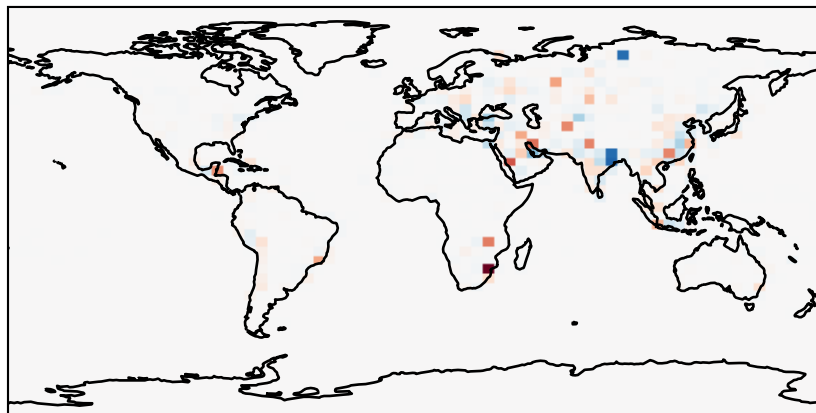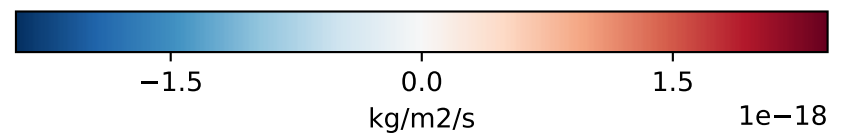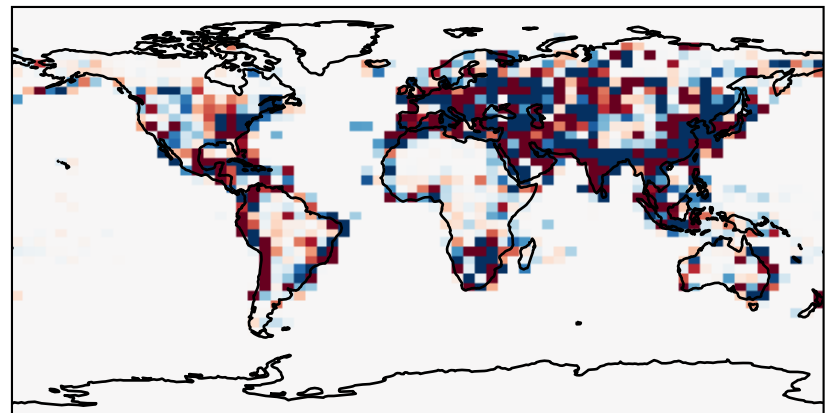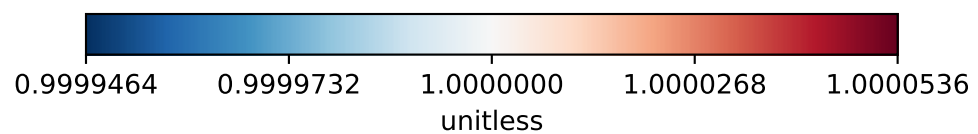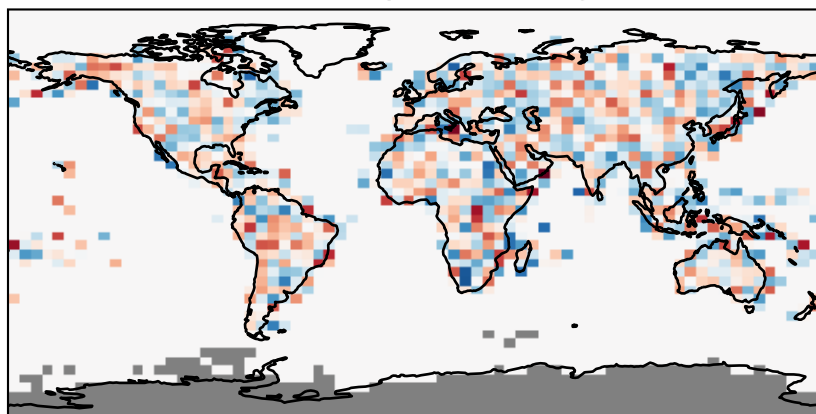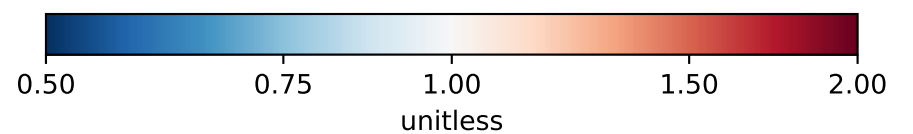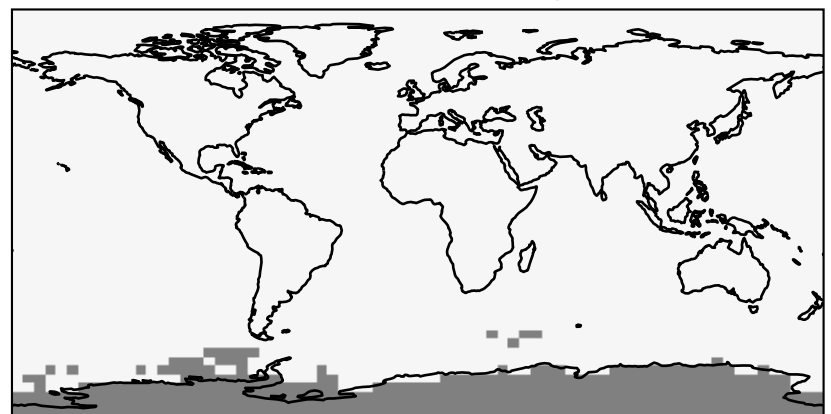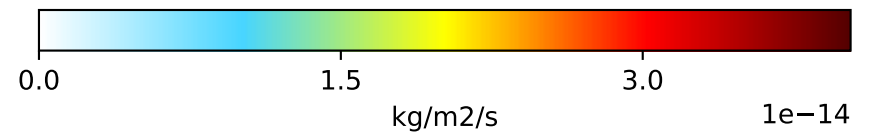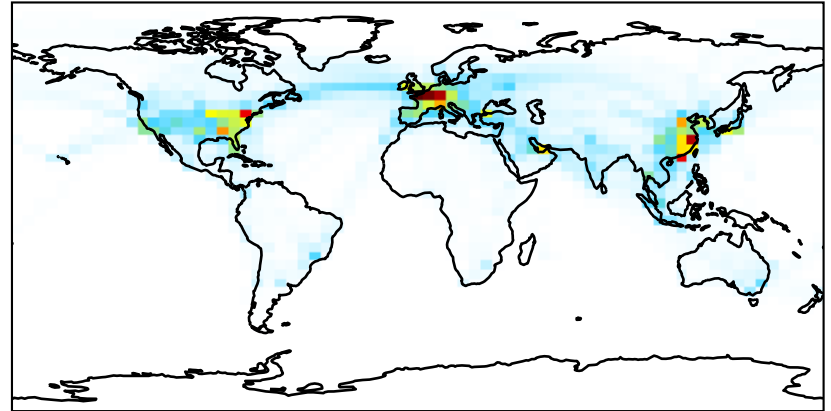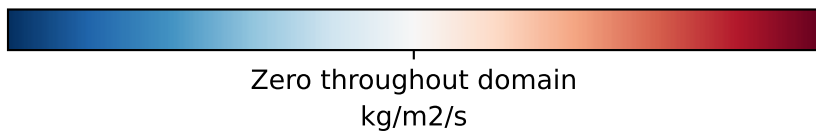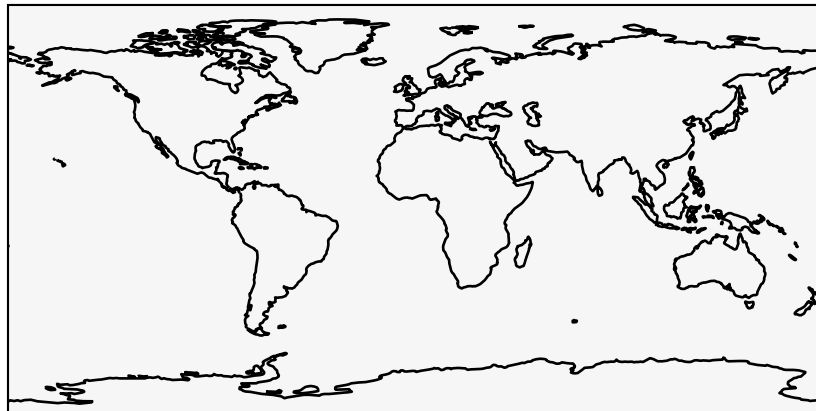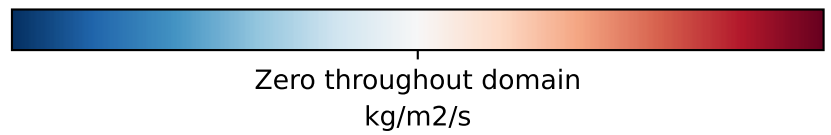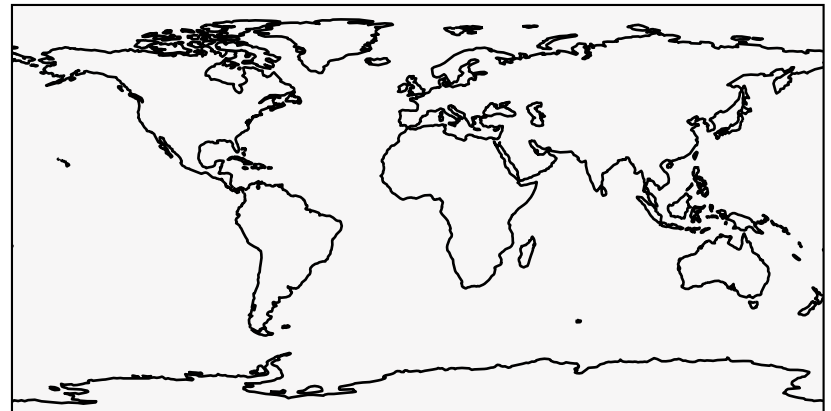unitless

Ref and Dev equal throughout domain
unitless

EmisSO4_Anthro (Apr2019)

# EmisSO4_Ship (Apr2019)



GCC_14.0.0 (Ref)
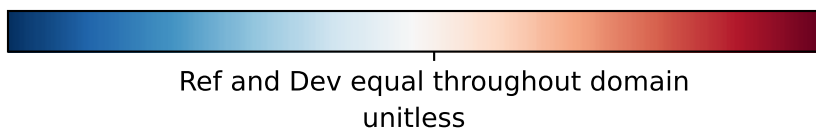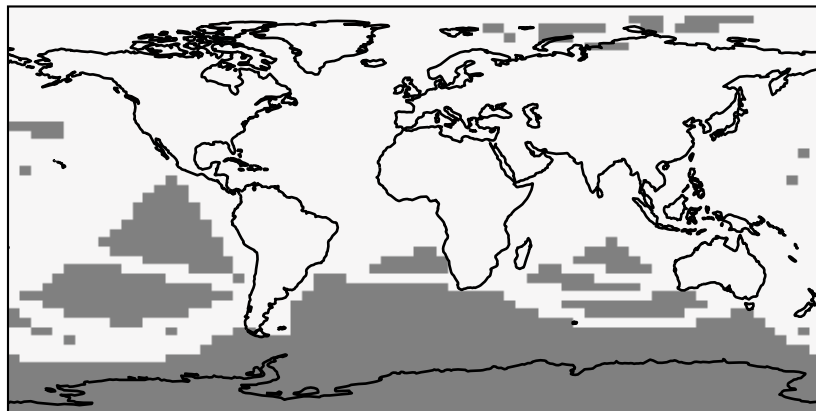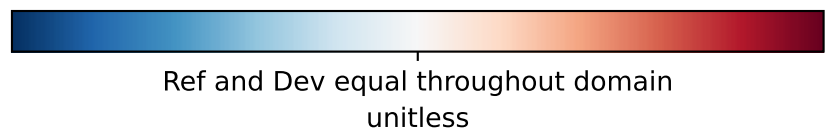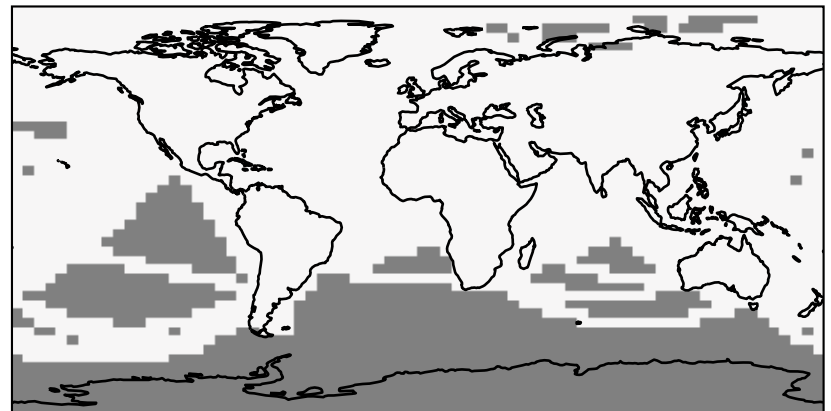4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

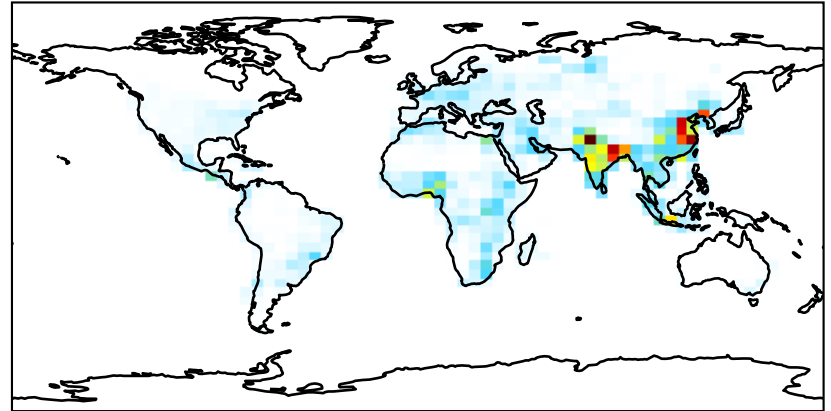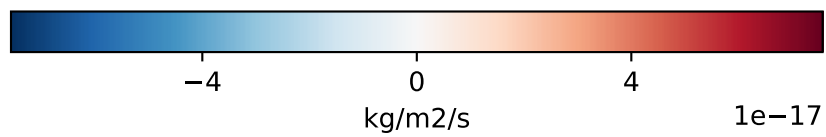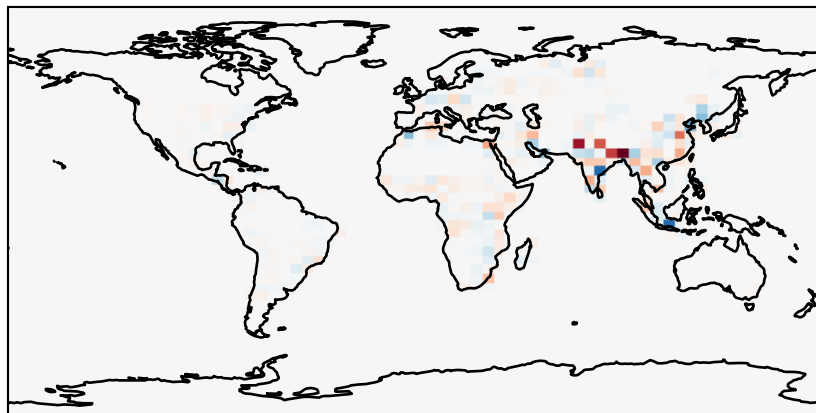Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

# EmisSO4_Total (Apr2019)
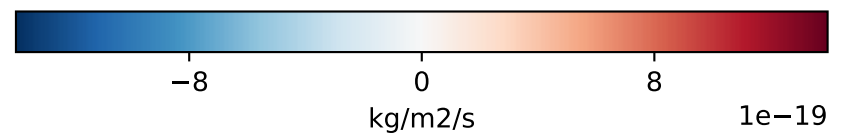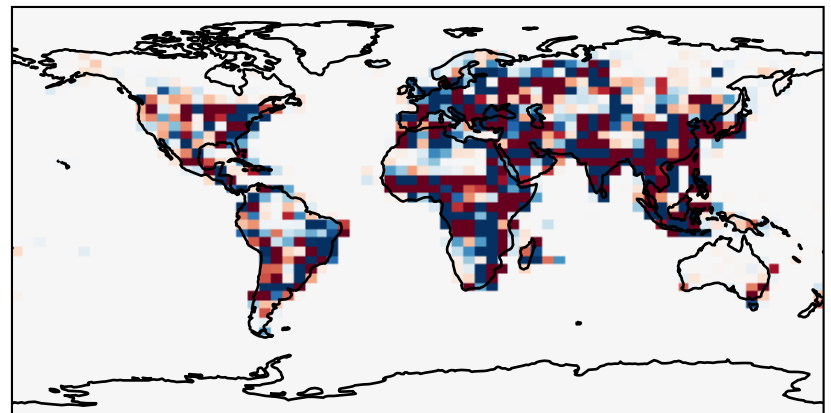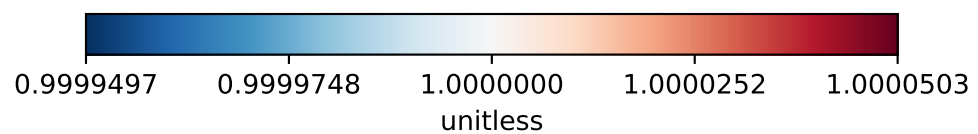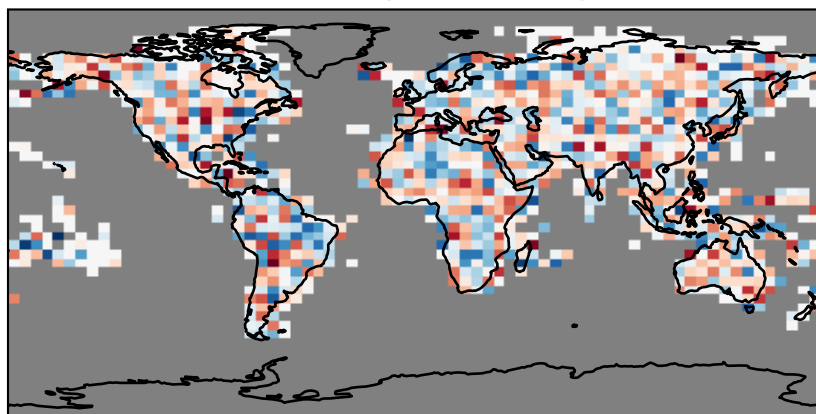
# EmisBCPI_Aircraft (Apr2019)



GCC_14.0.0 (Ref)
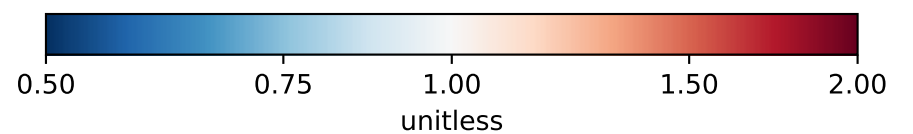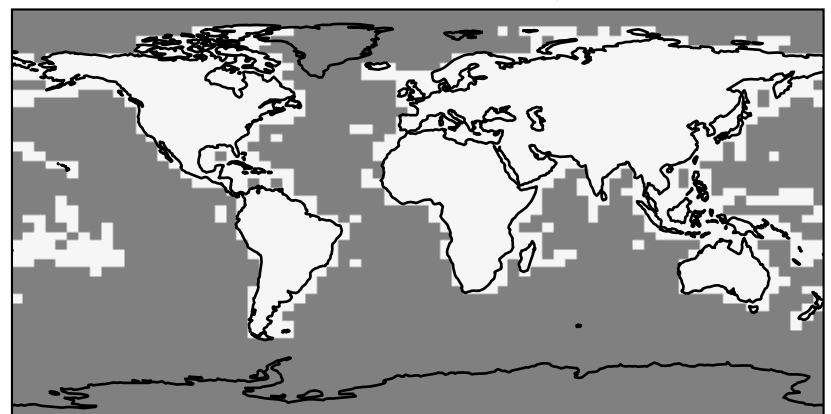4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

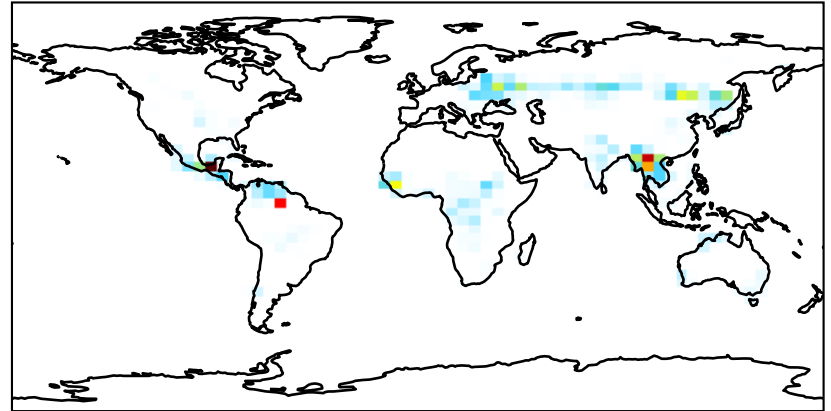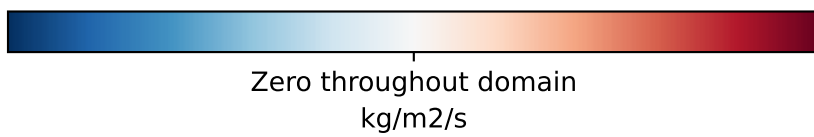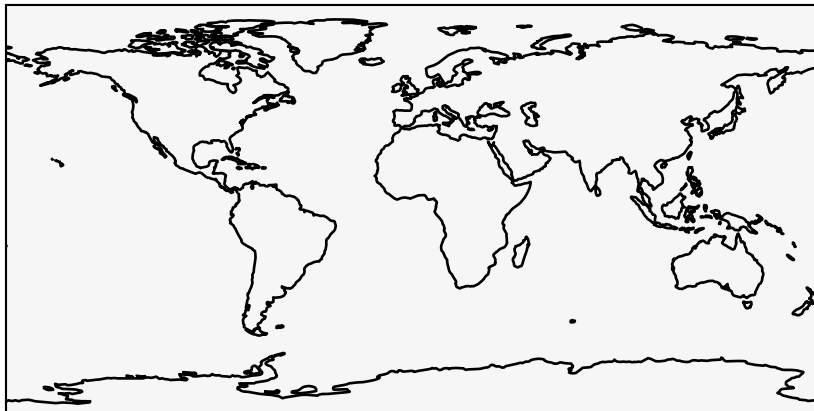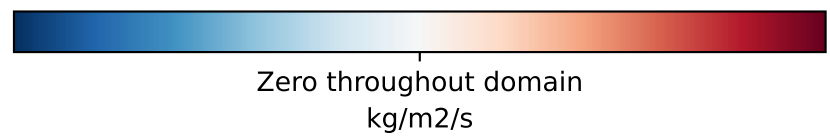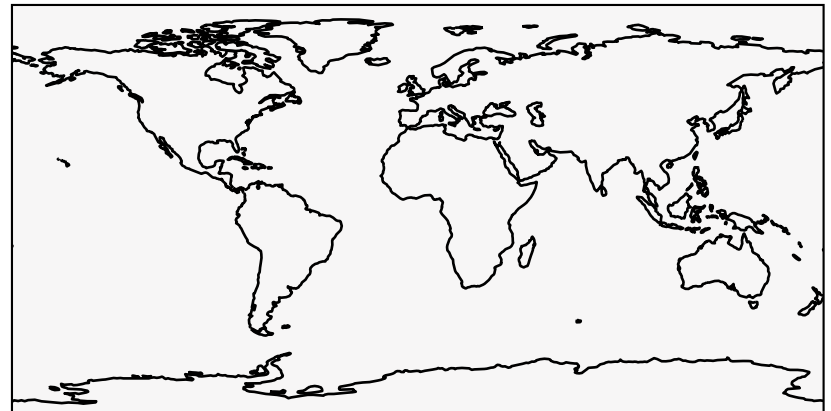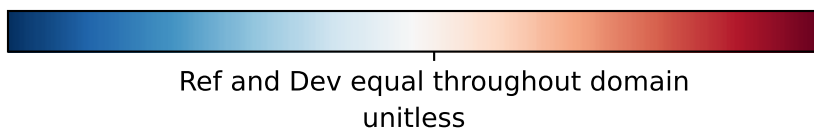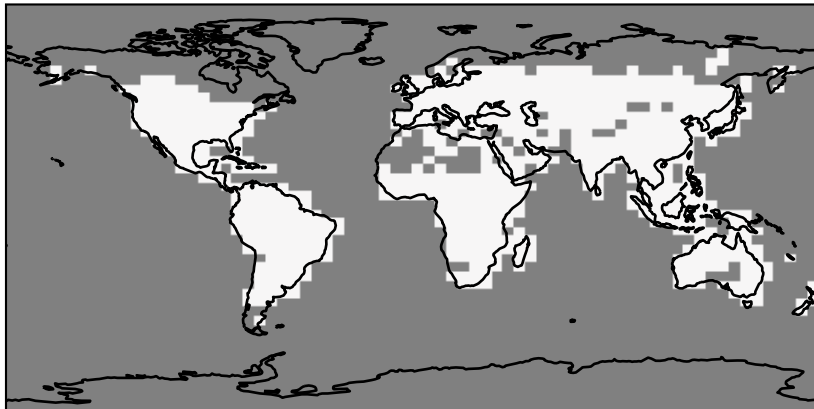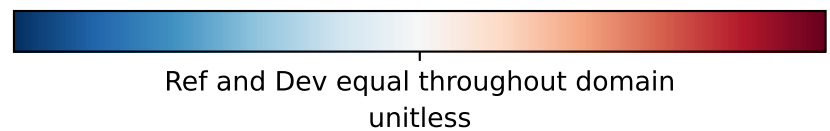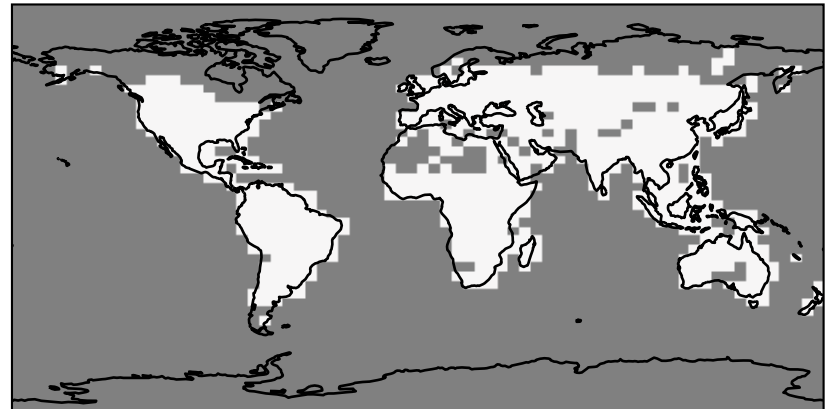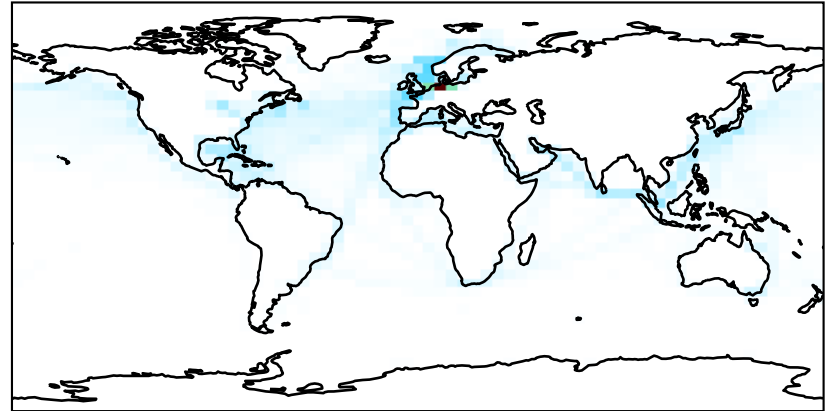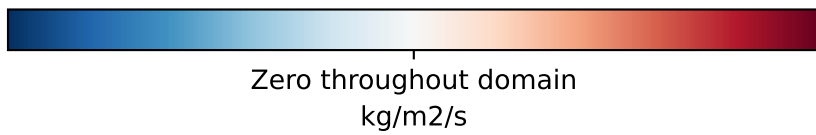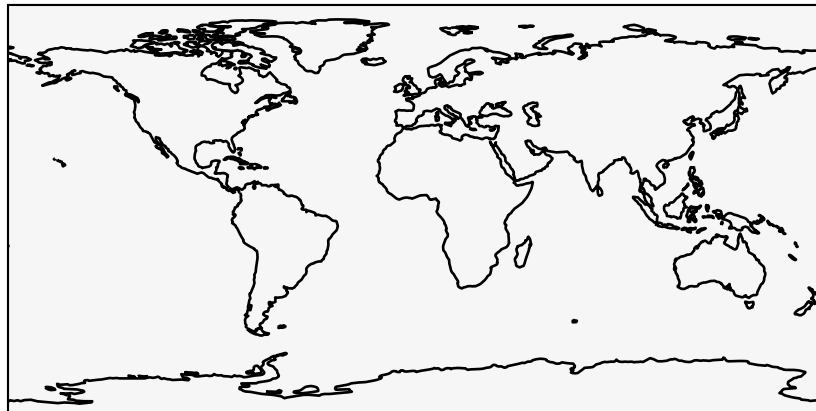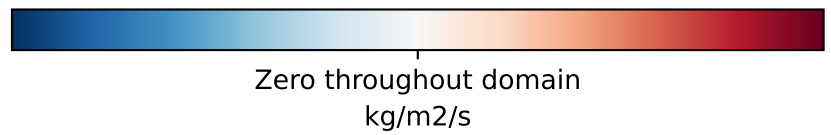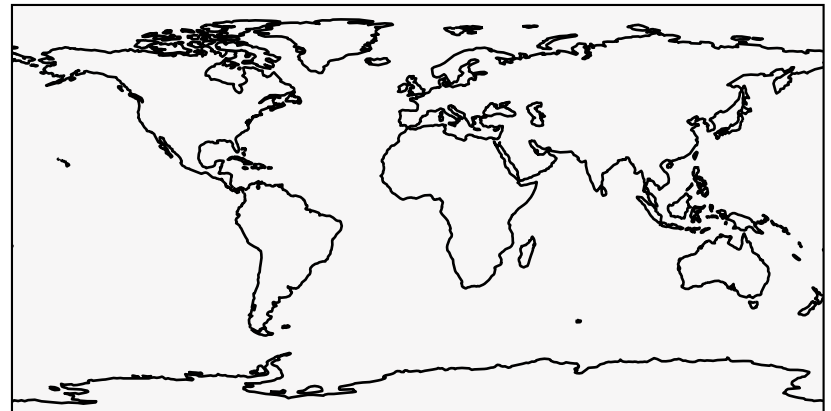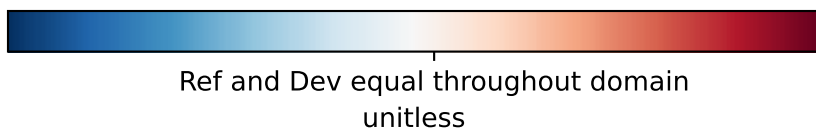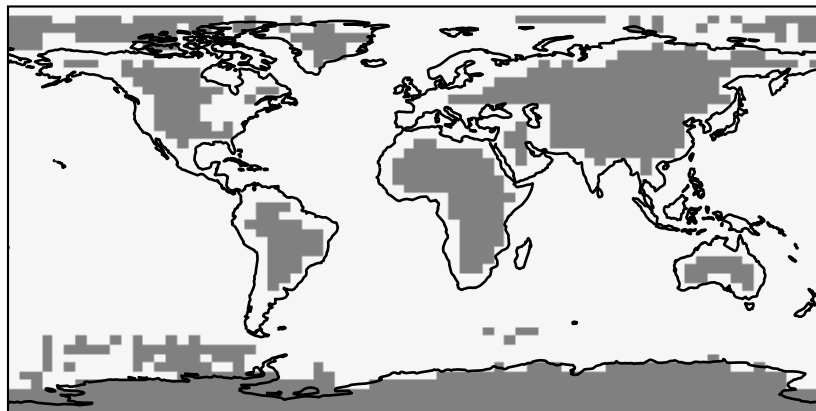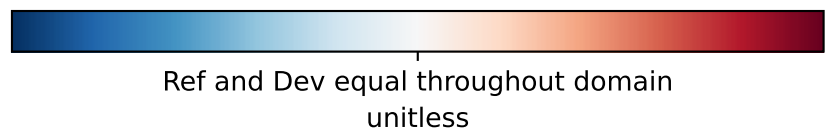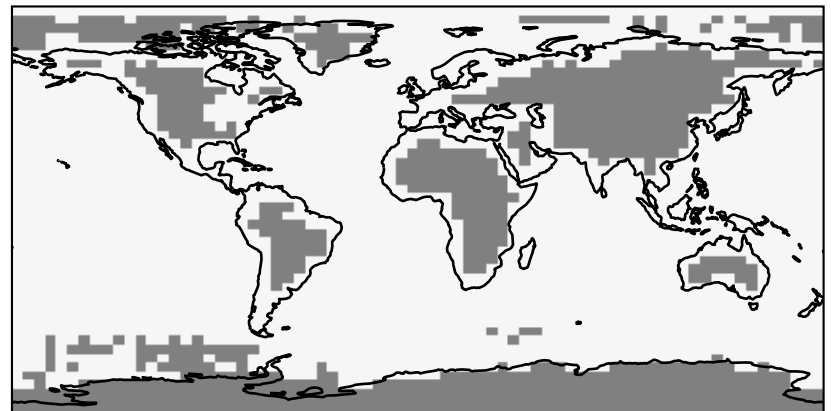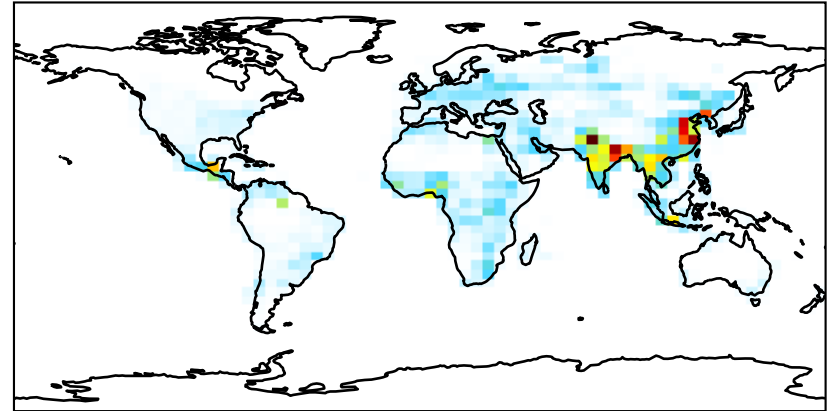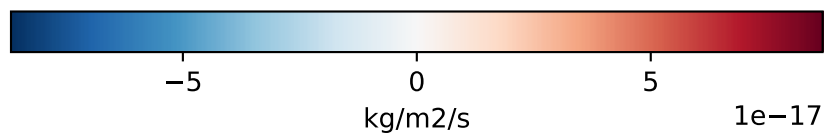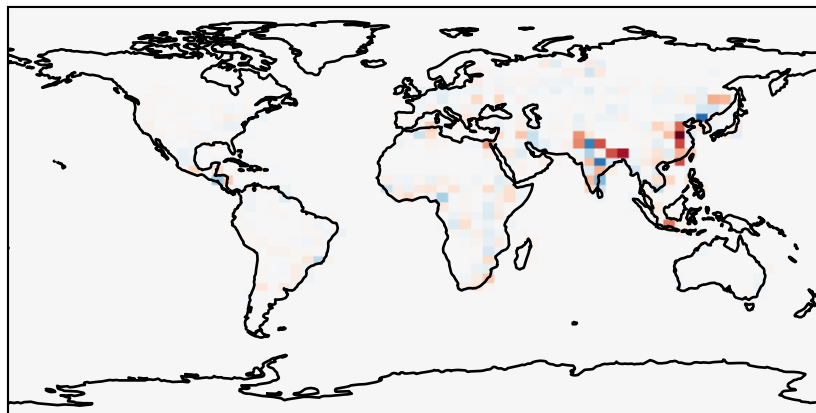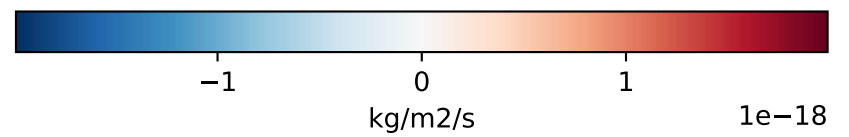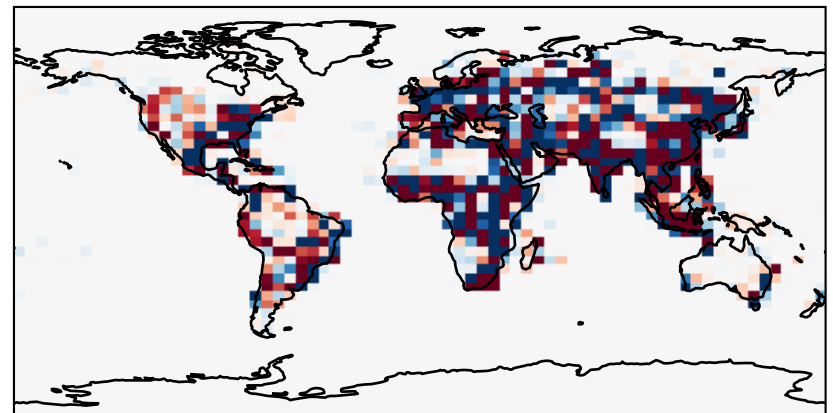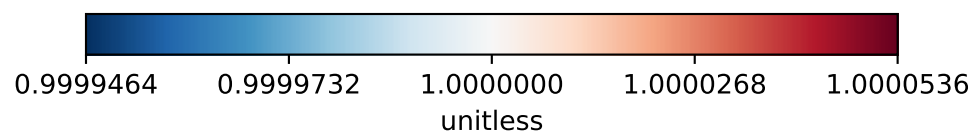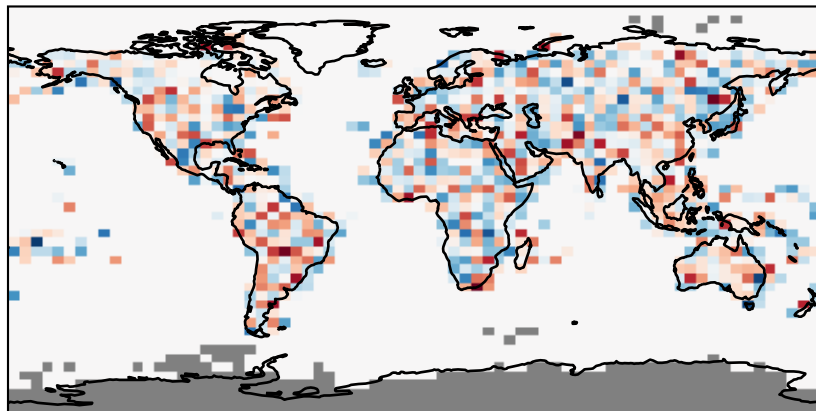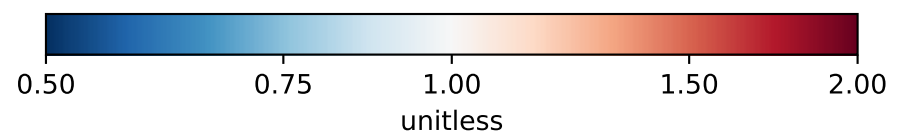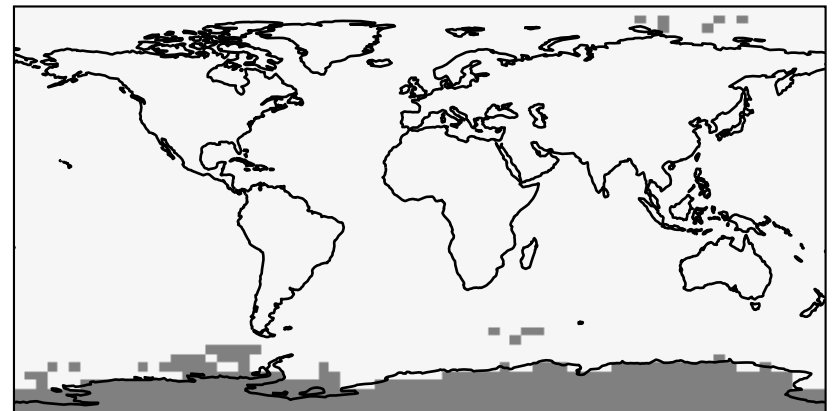Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

# EmisBCPI_Anthro (Apr2019)

EmisBCPI_BioBurn (Apr2019)

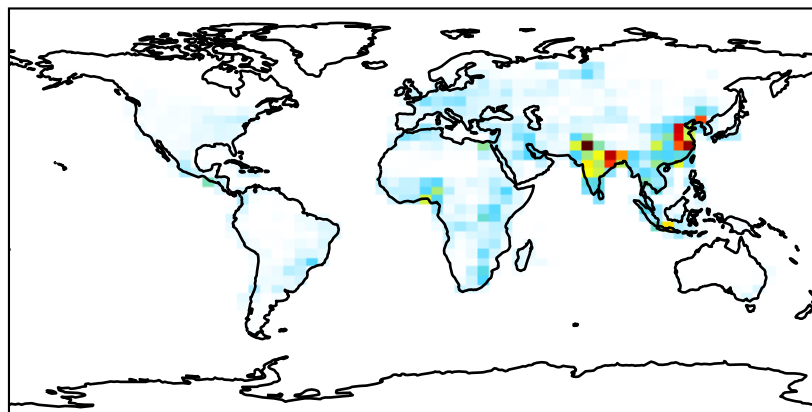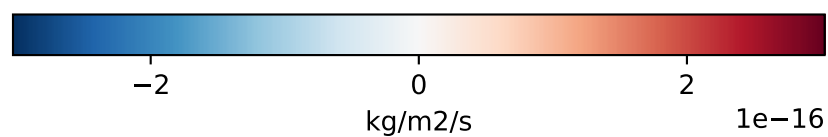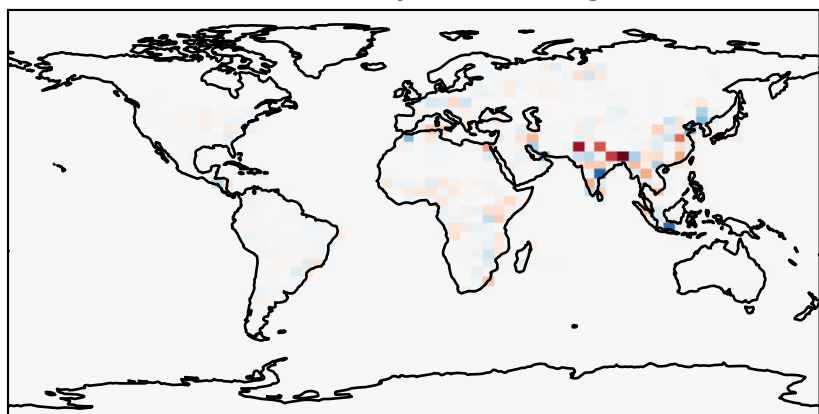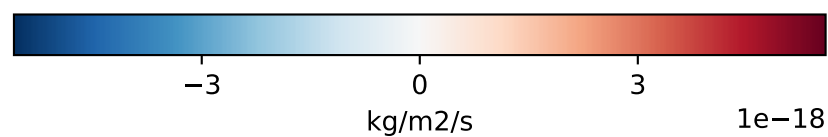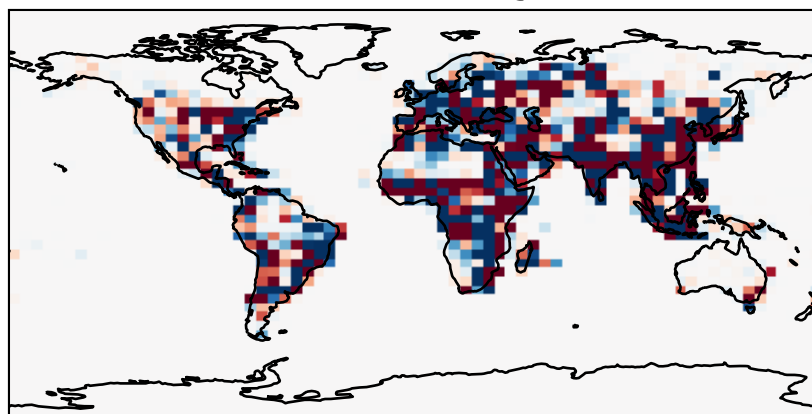EmisBCPI_Ship (Apr2019)

EmisBCPI_Total (Apr2019)

# EmisBCPO_Anthro (Apr2019)

# EmisBCPO_BioBurn (Apr2019)



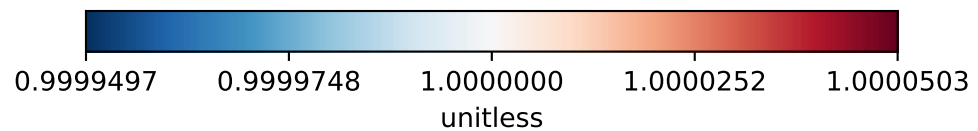GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s
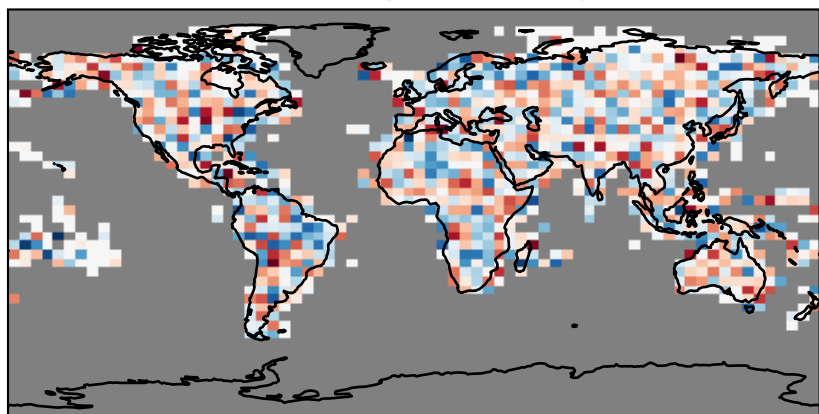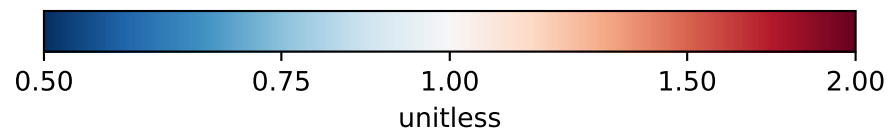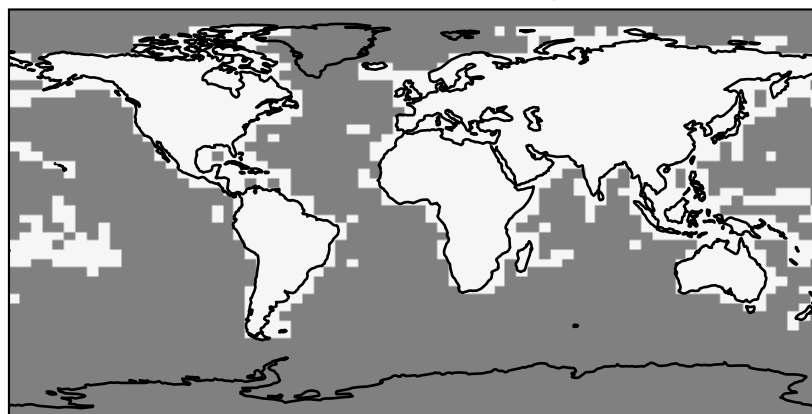
kg/m2/s

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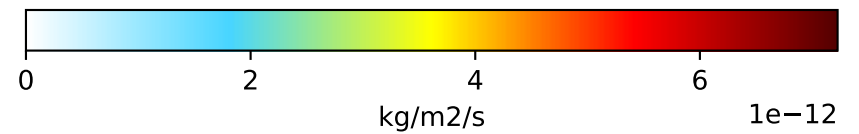
Difference
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

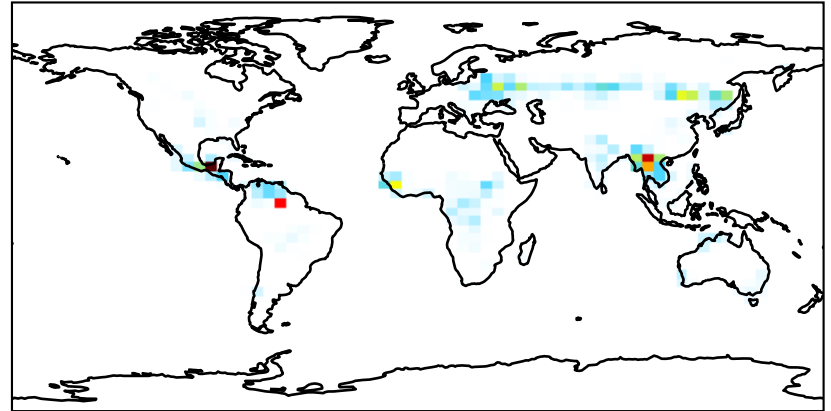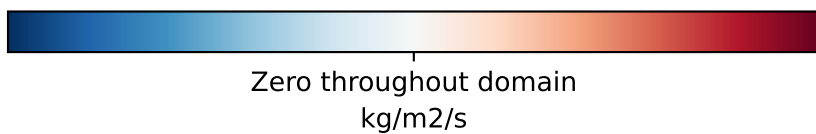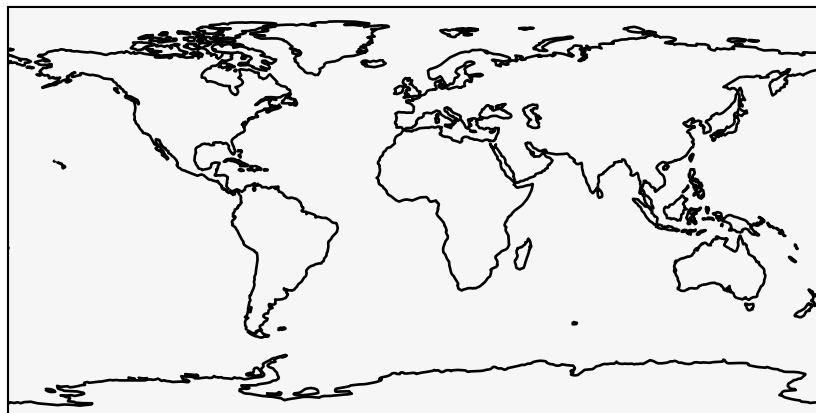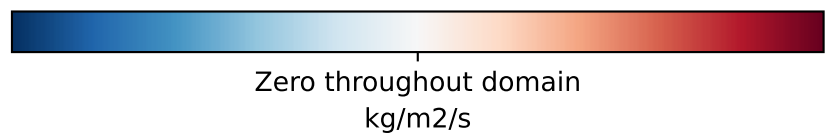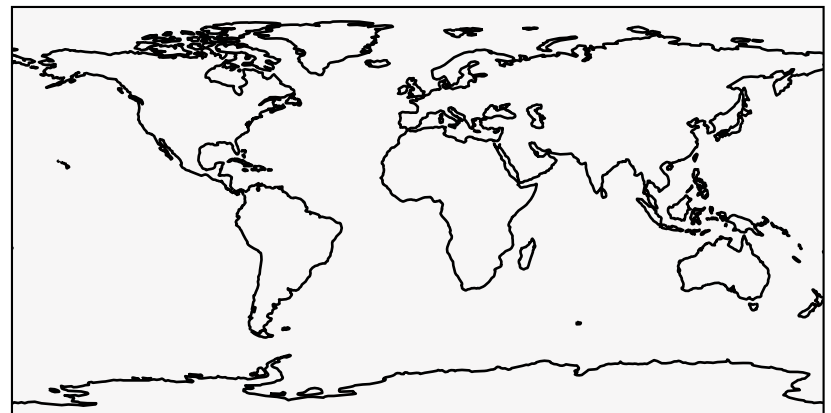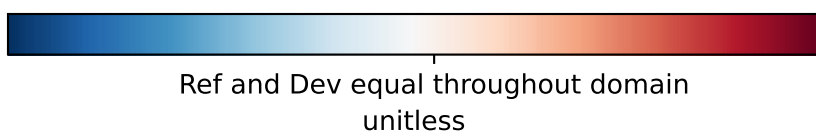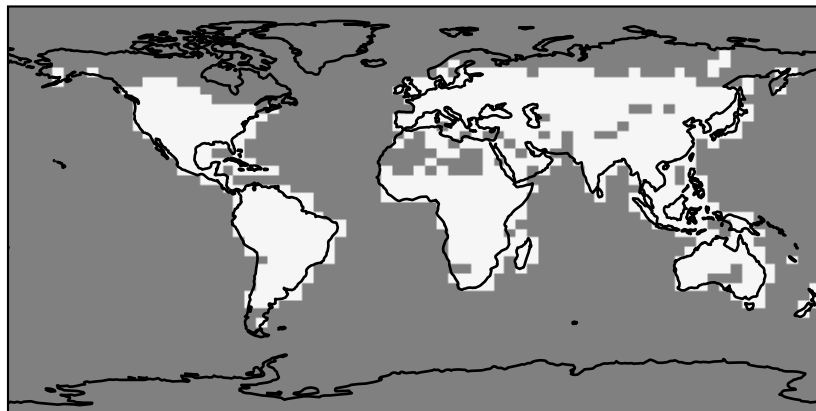Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

# EmisBCPO_Ship (Apr2019)

EmisBCPO_Total (Apr2019)

# EmisOCPI_Aircraft (Apr2019)



GCC_14.0.0 (Ref)
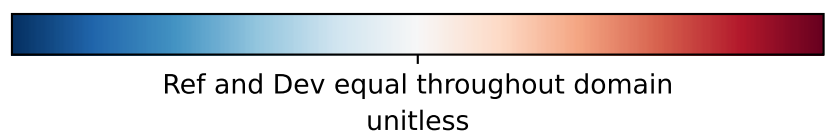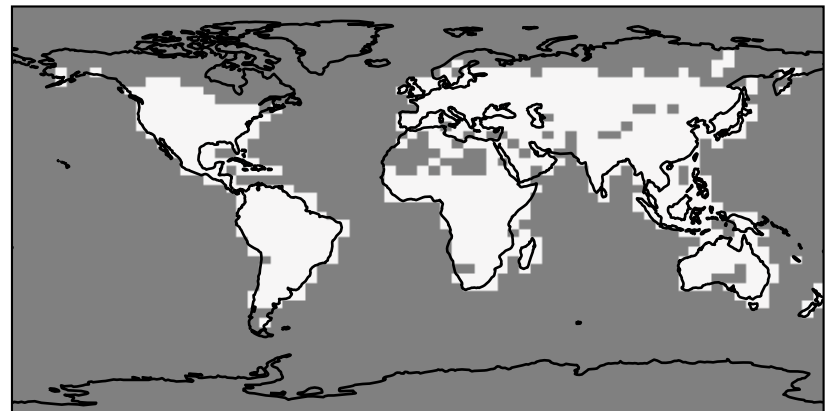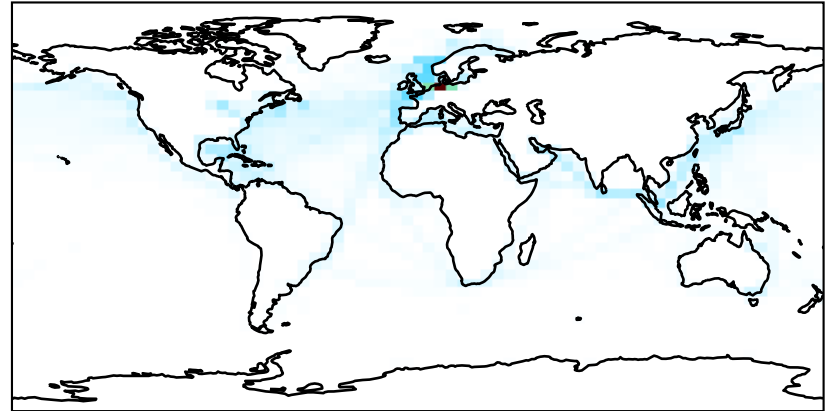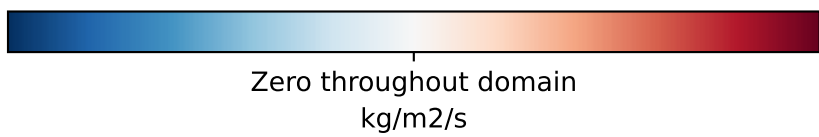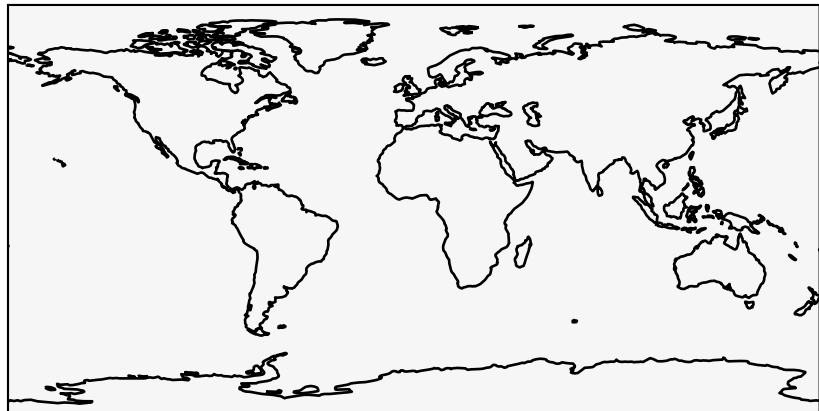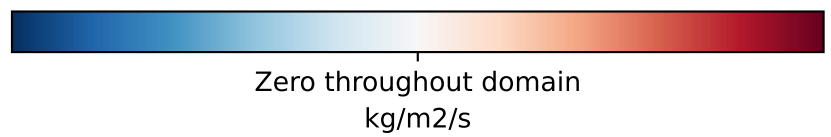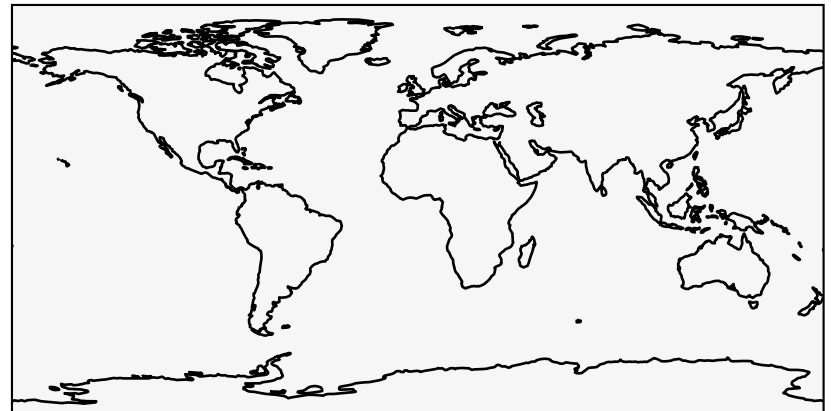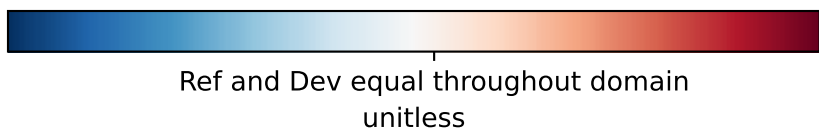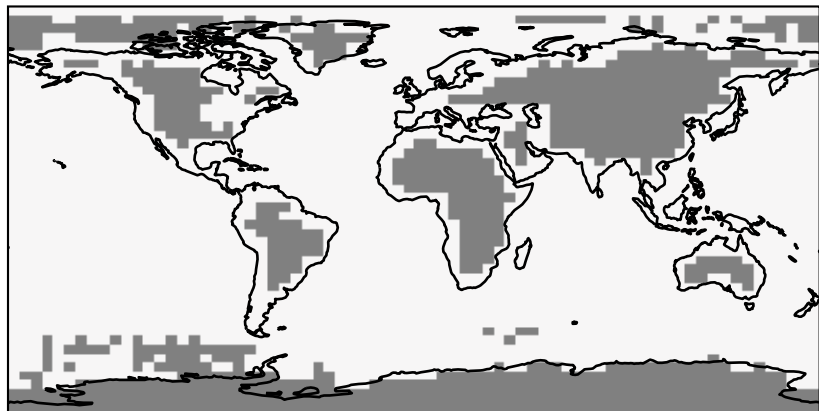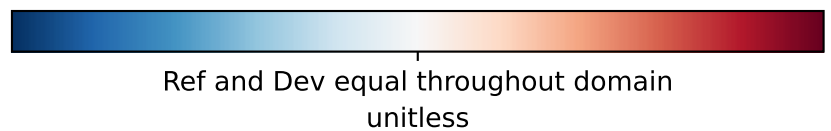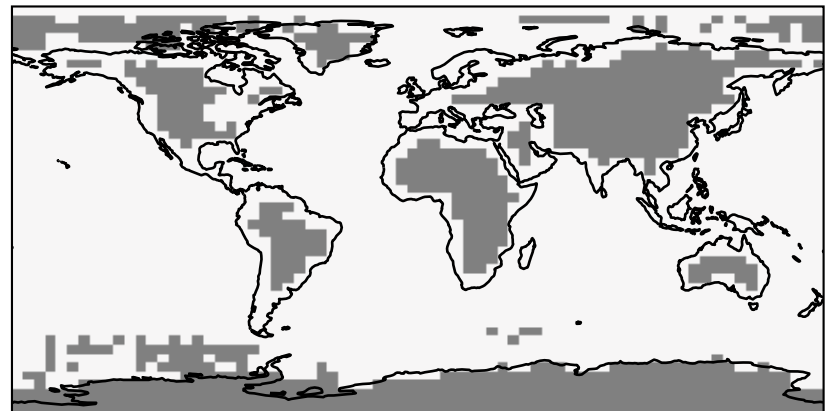4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

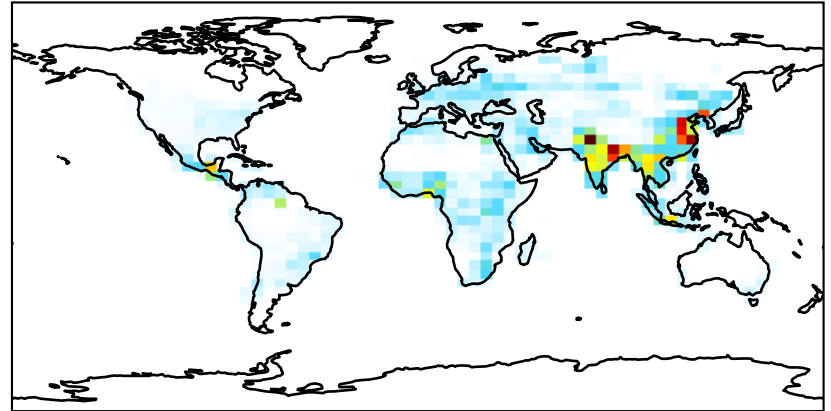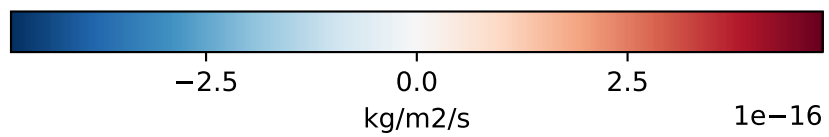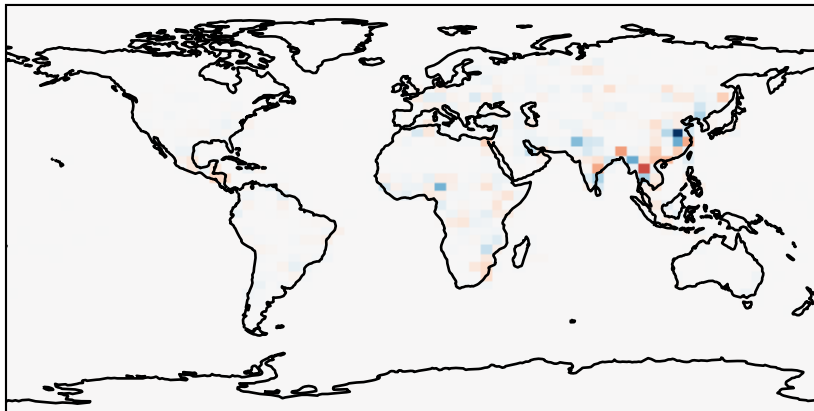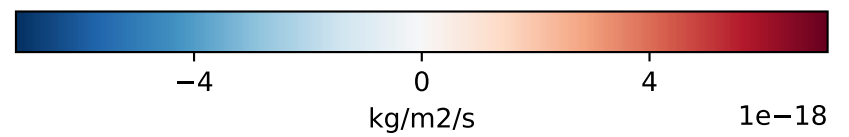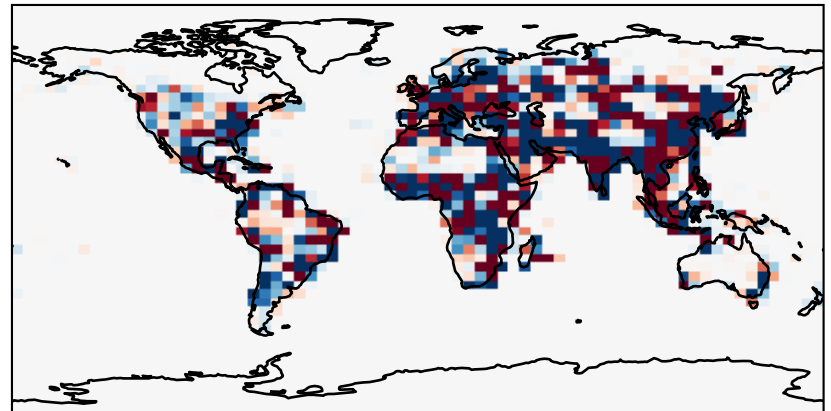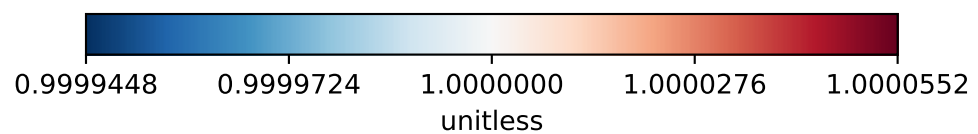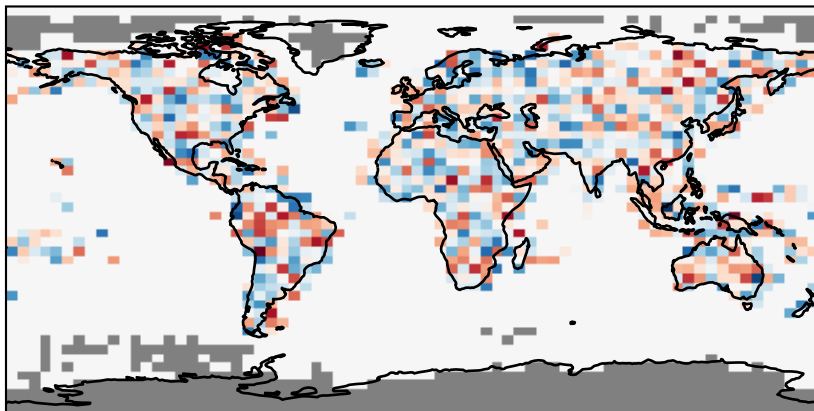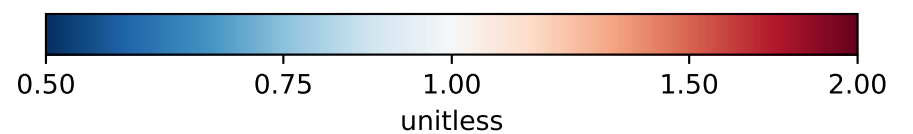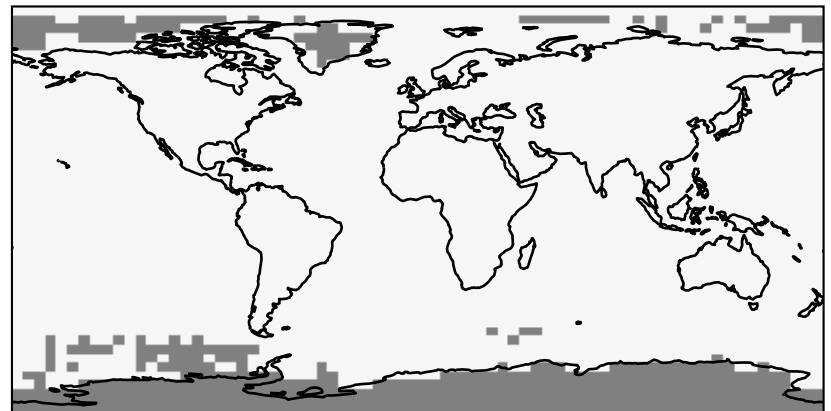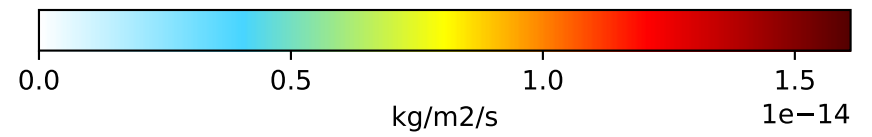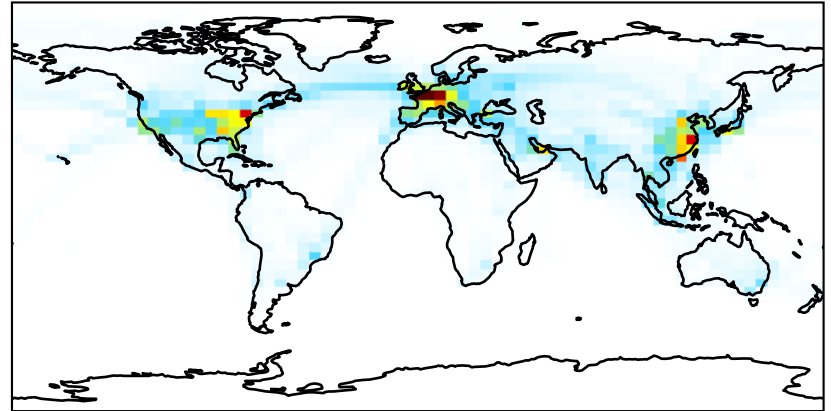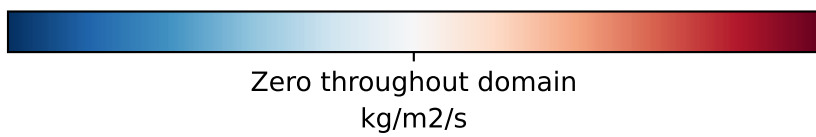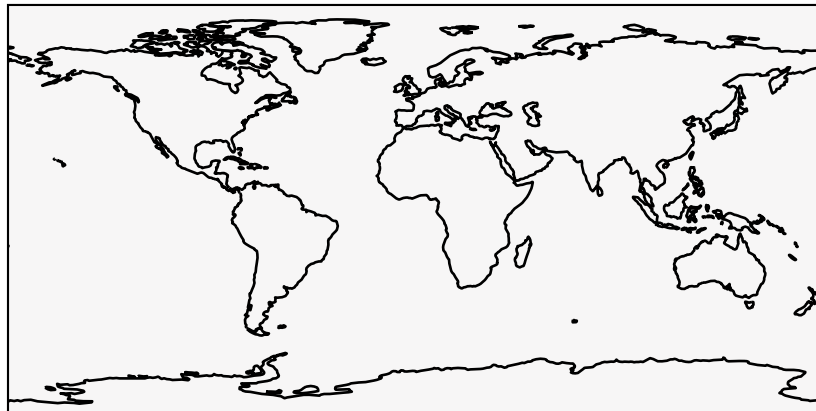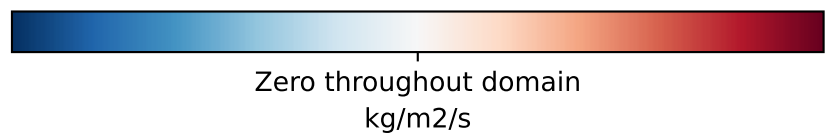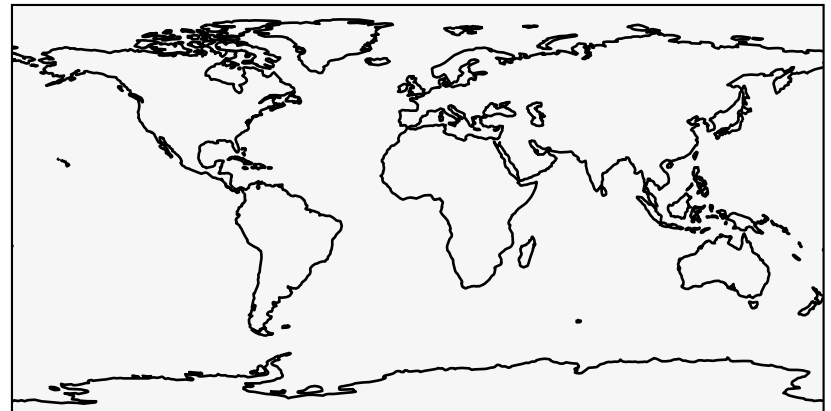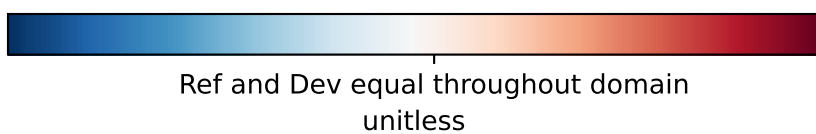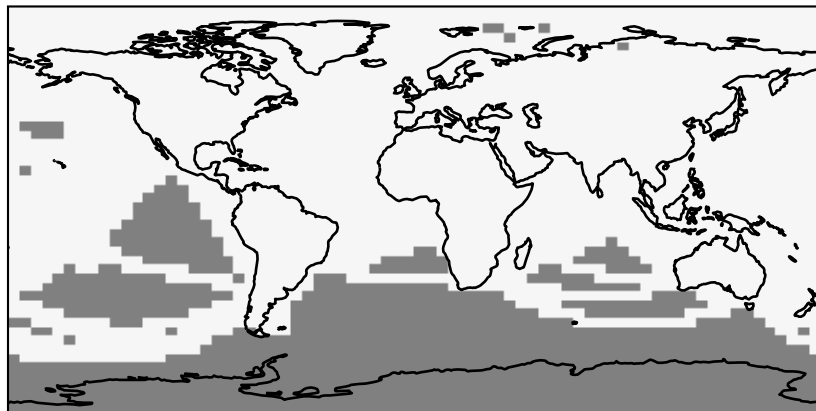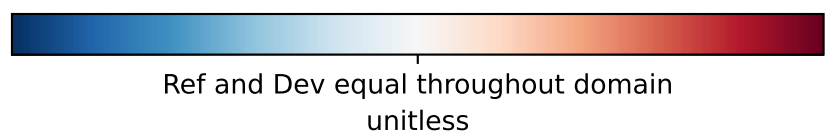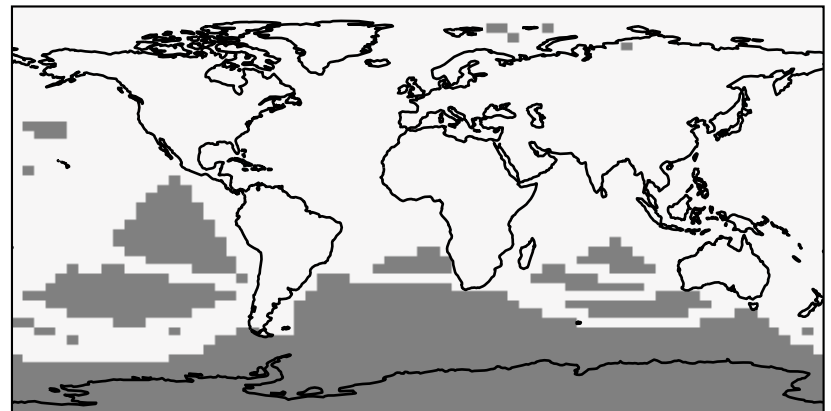Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

EmisOCPI_Anthro (Apr2019)

# EmisOCPI_BioBurn (Apr2019)



| GCC_14.0.0 (Ref) | GCC_14.2.0 (Dev) |
| 4.0x5.0 | 4.0x5.0 |

kg/m2/s    1e−11

Difference
Dev − Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range
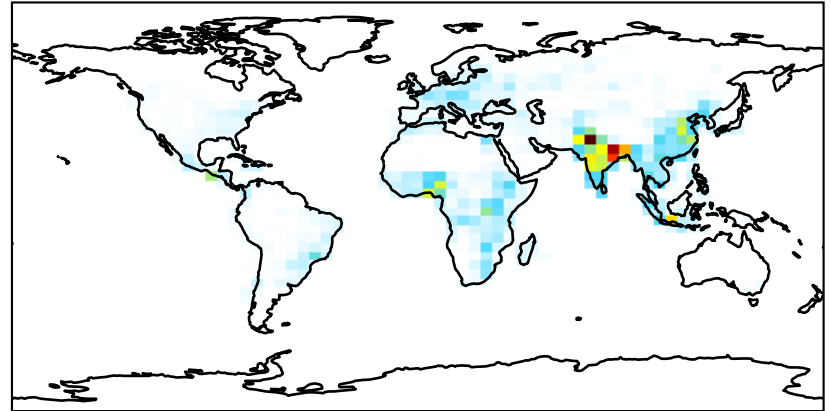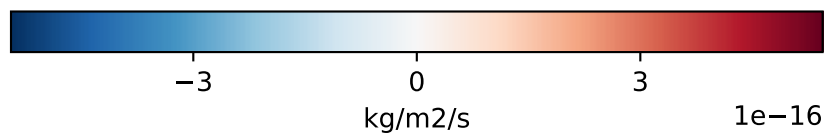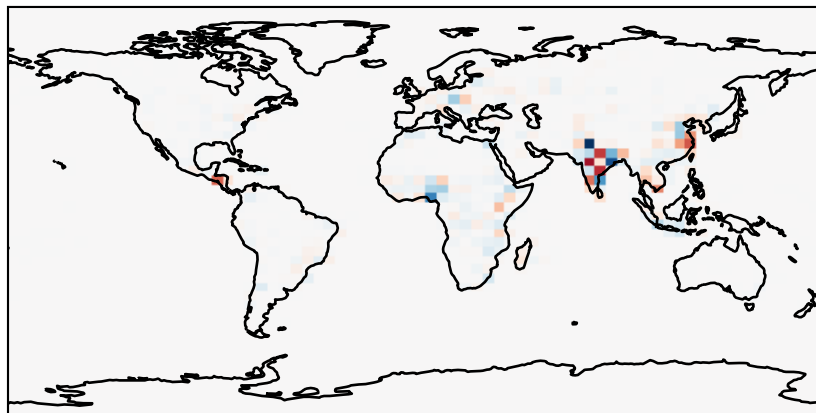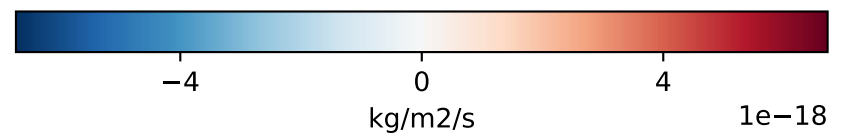
Ref and Dev equal throughout domain
unitless

# EmisOCPI_Ship (Apr2019)

# EmisOCPI_Total (Apr2019)

GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

kg/m2/s

kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range
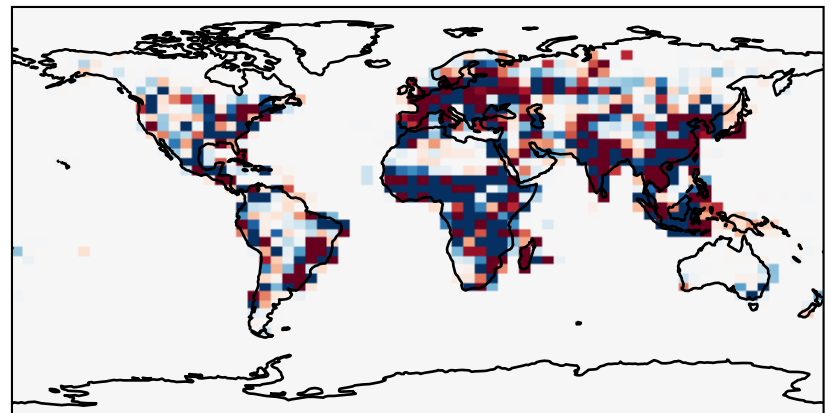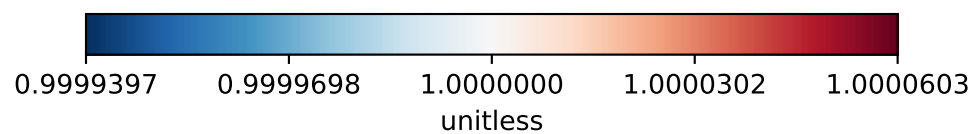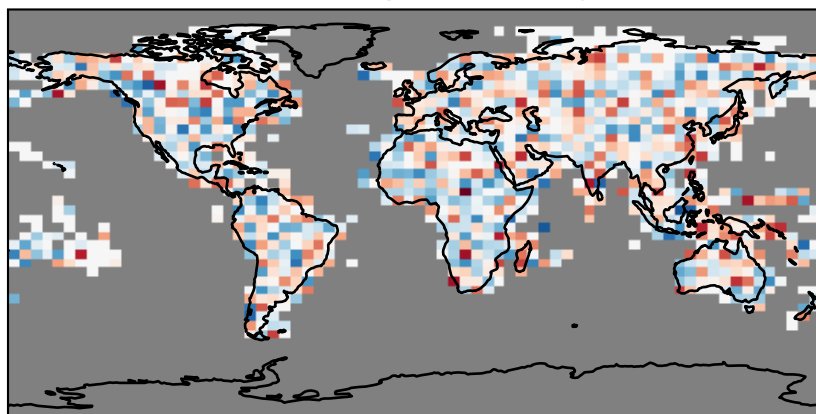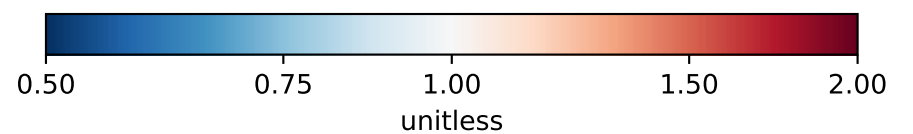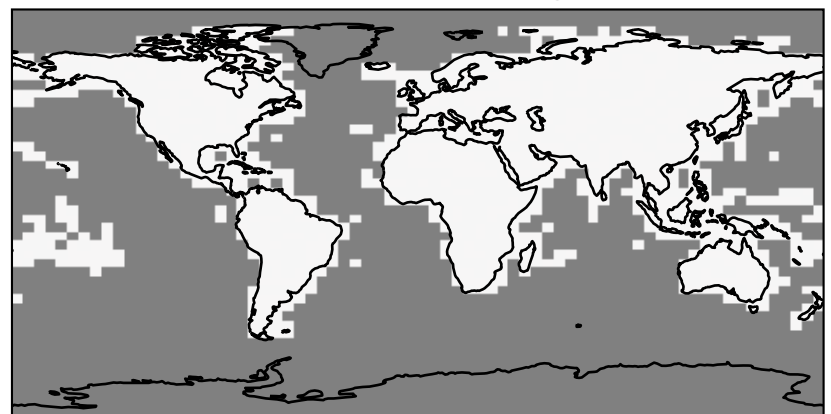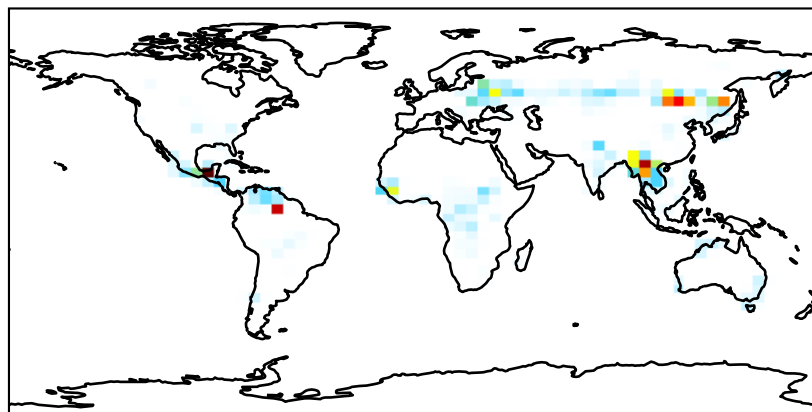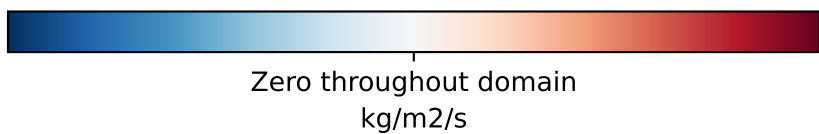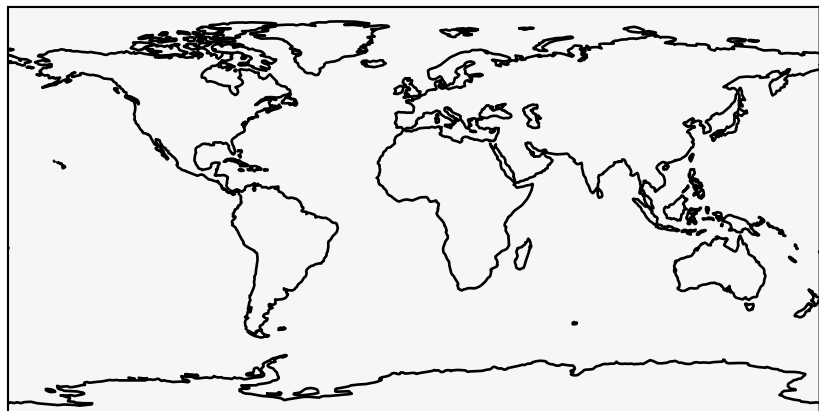
unitless

unitless

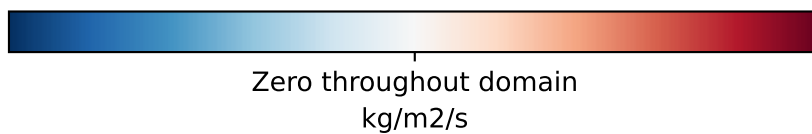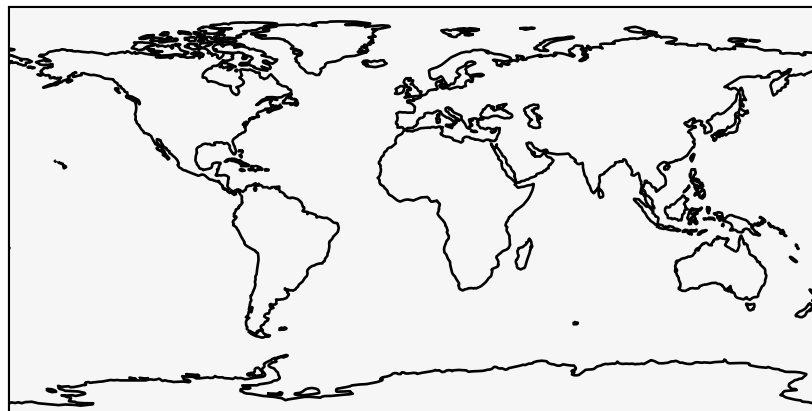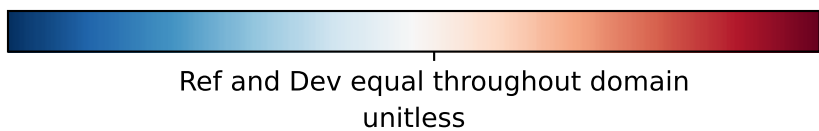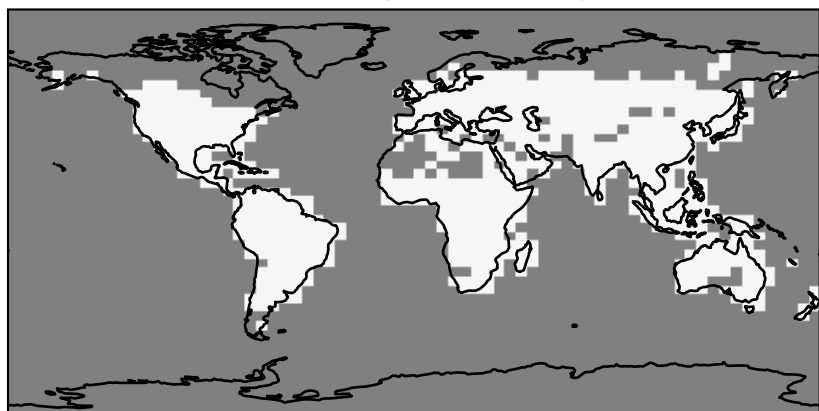# EmisOCPO_Anthro (Apr2019)



GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
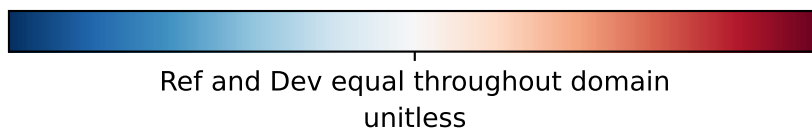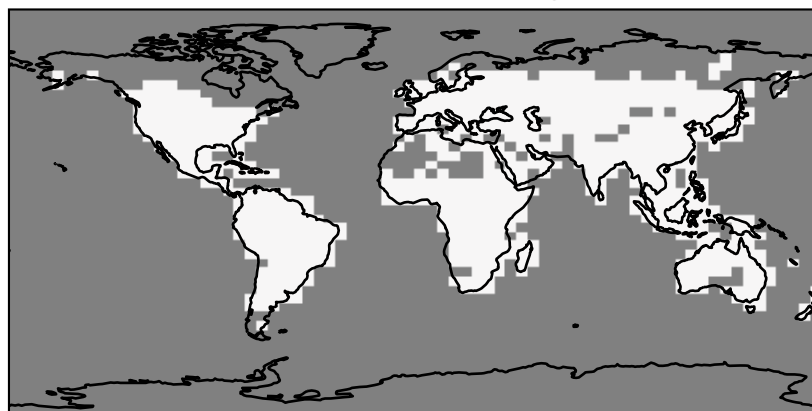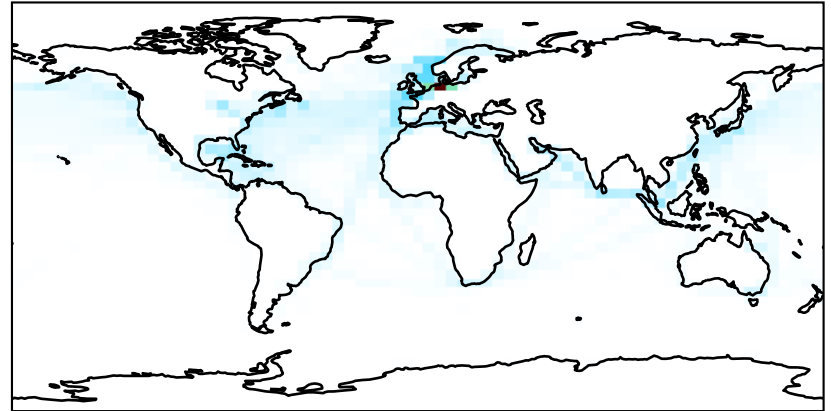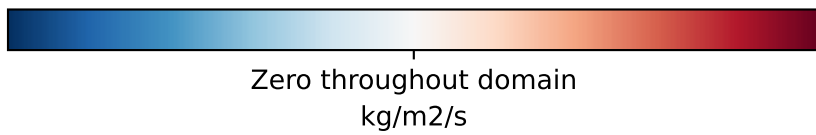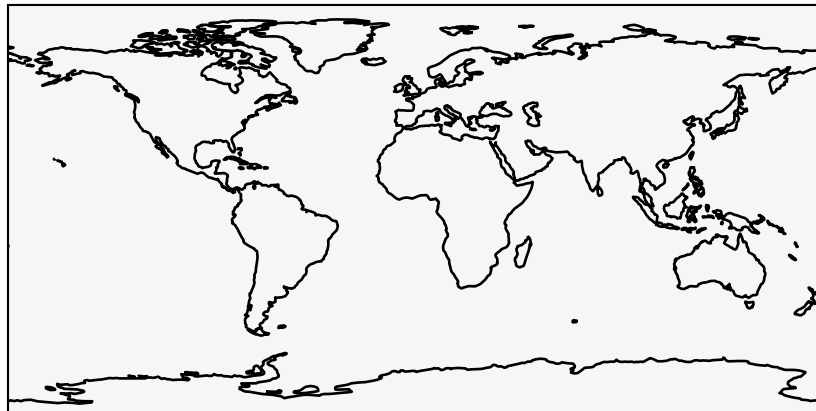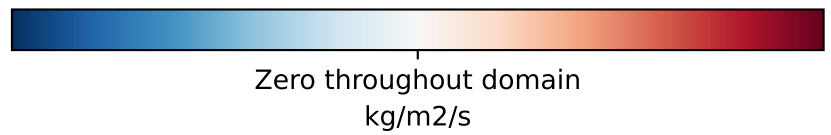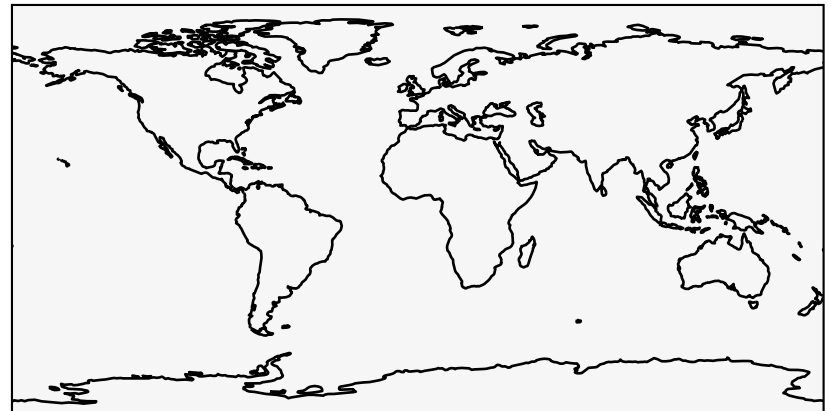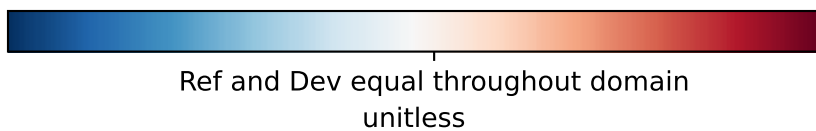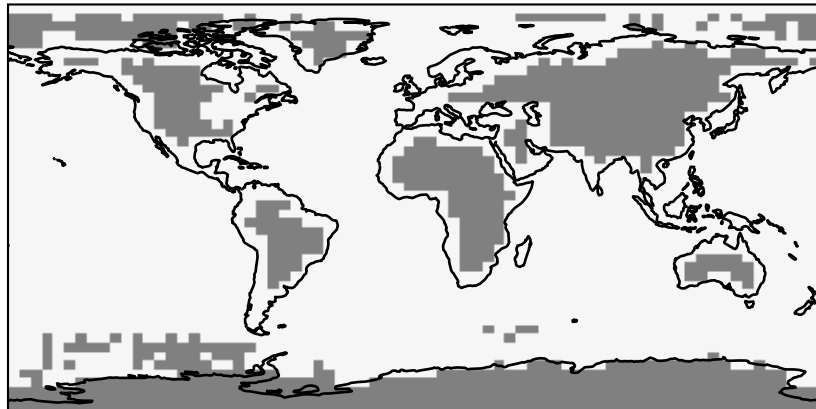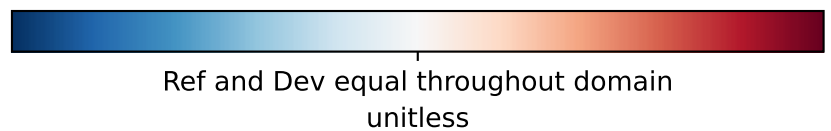4.0x5.0

kg/m2/s

Difference
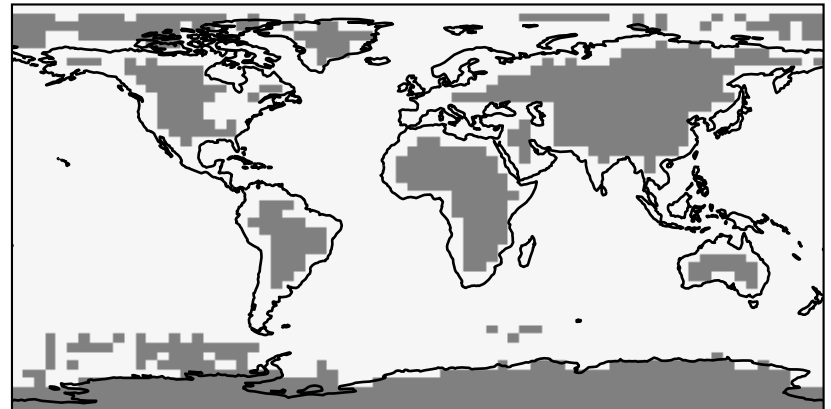Dev - Ref, Dynamic Range

Difference
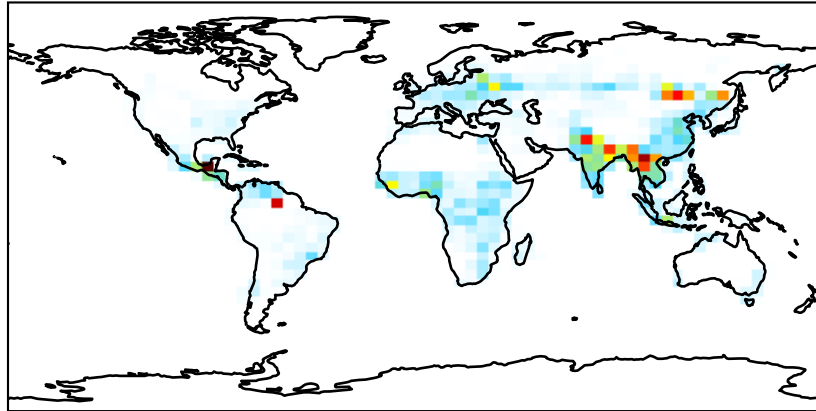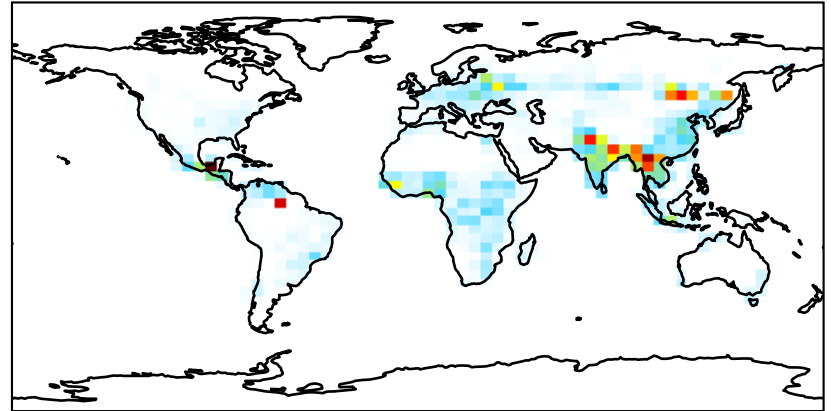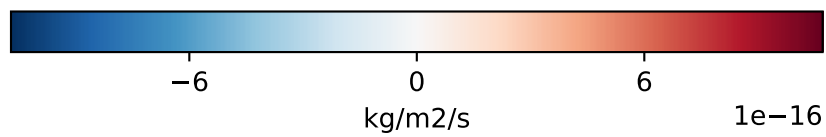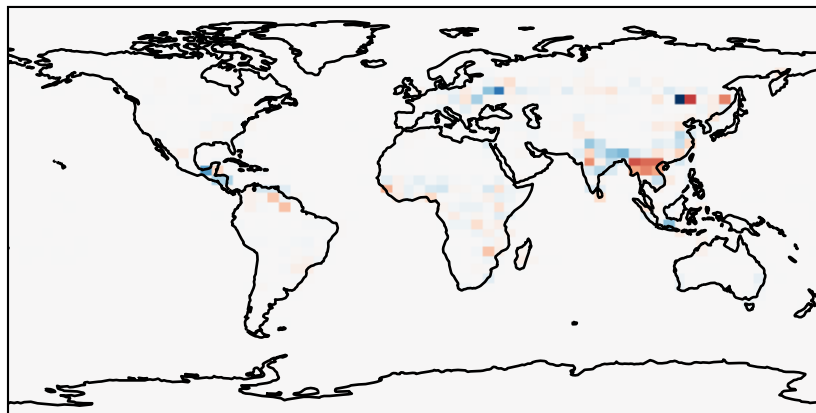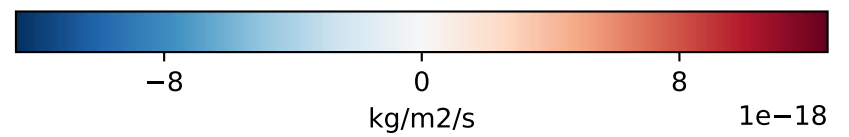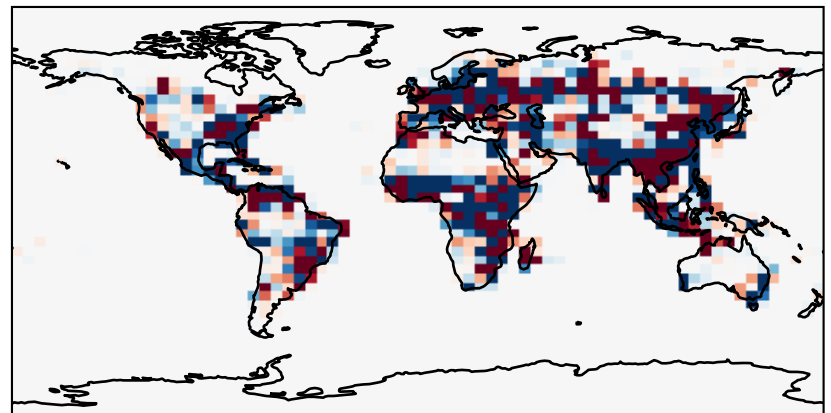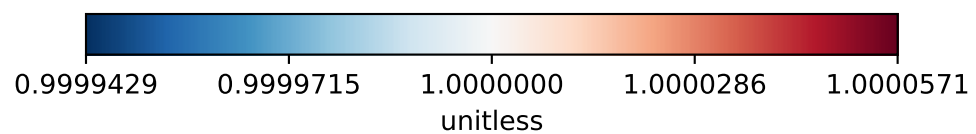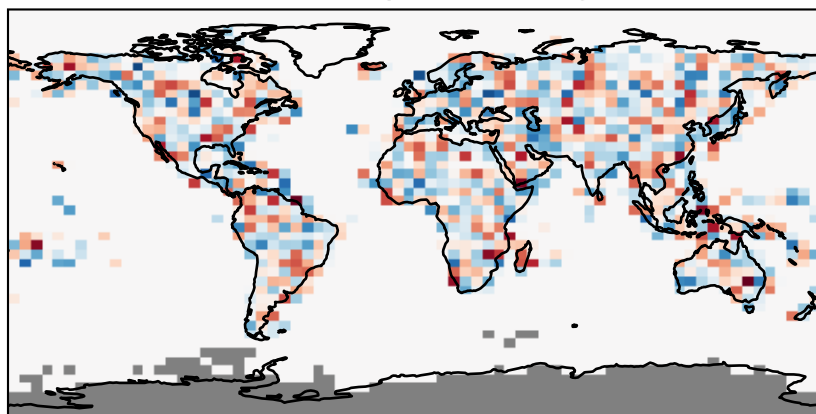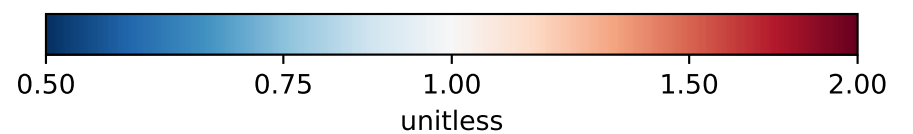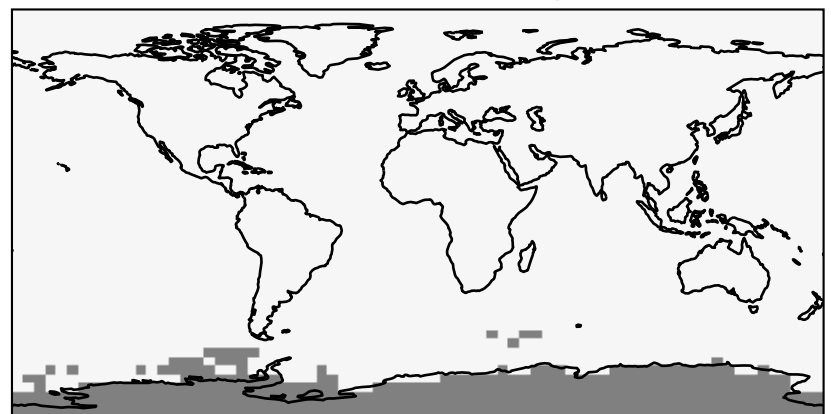Dev - Ref, Restricted Range [5%,95%]
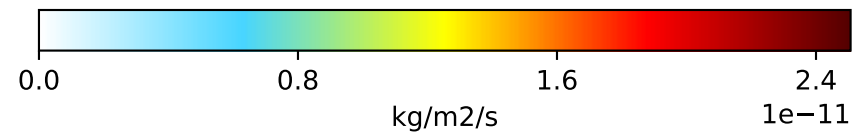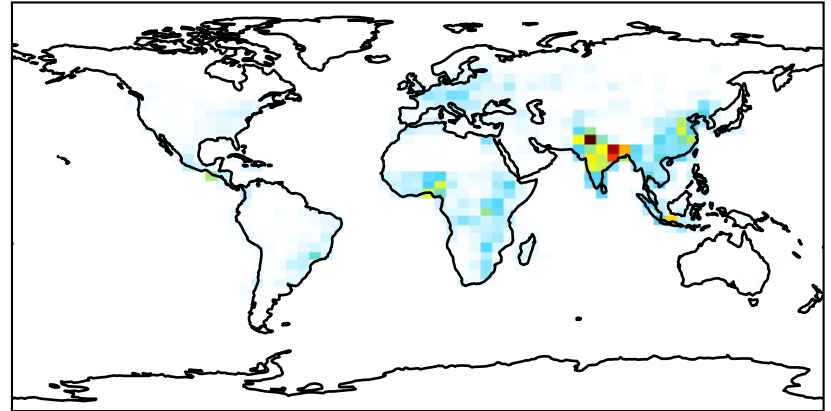
kg/m2/s

Ratio
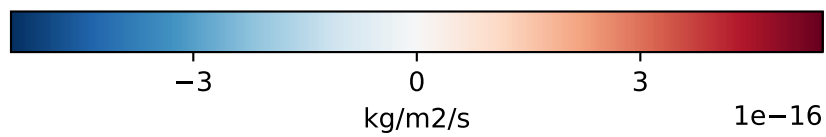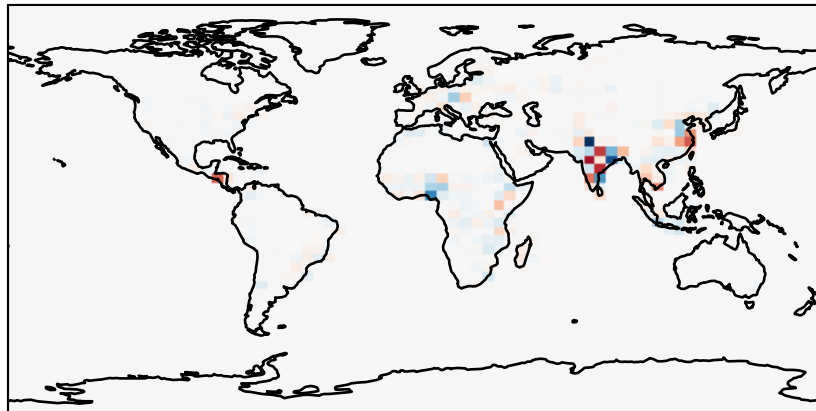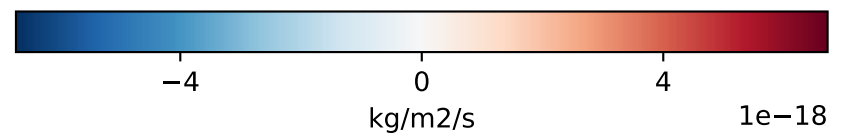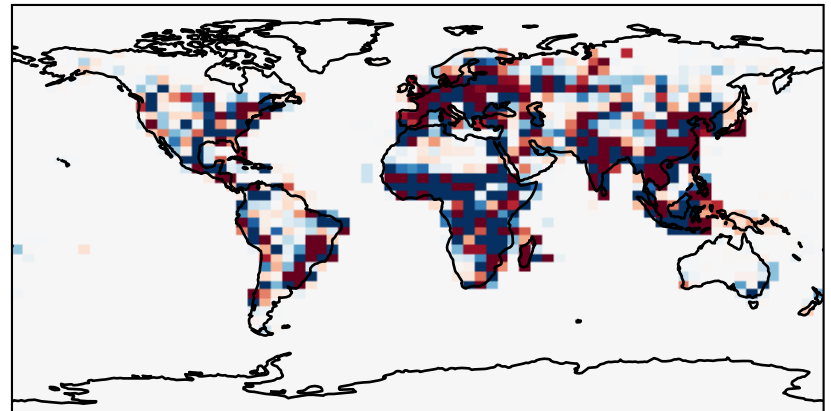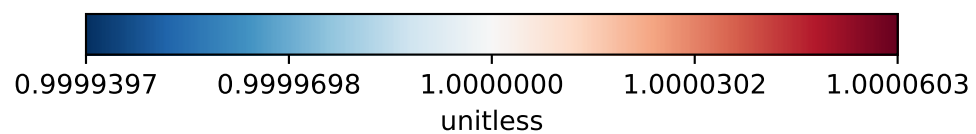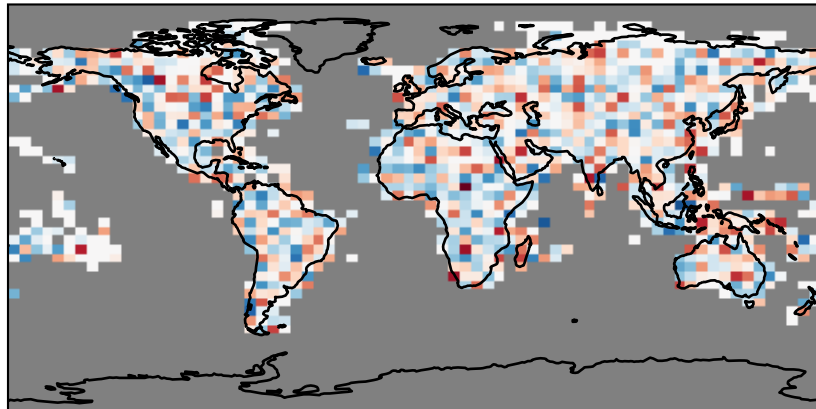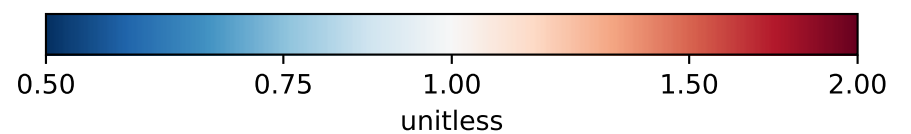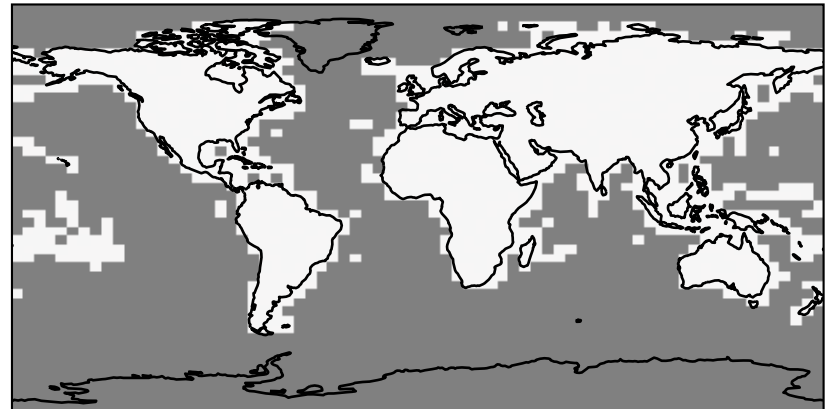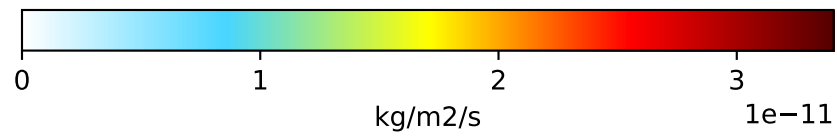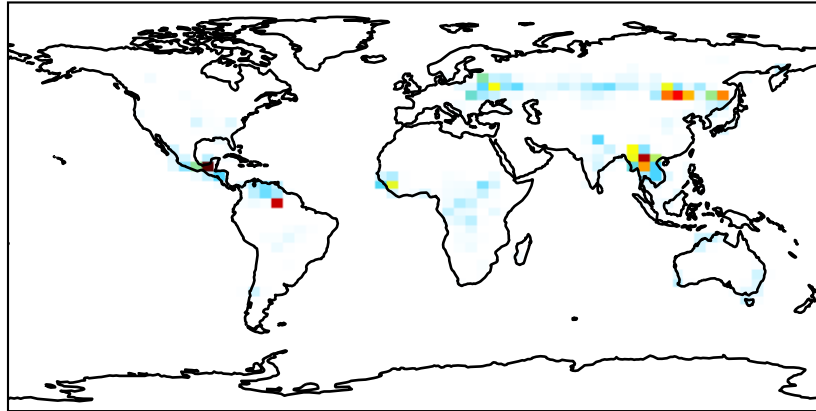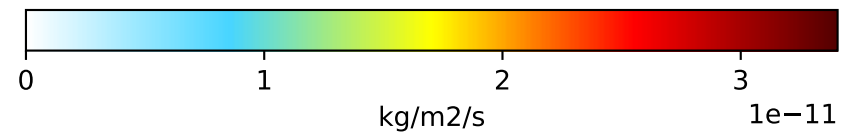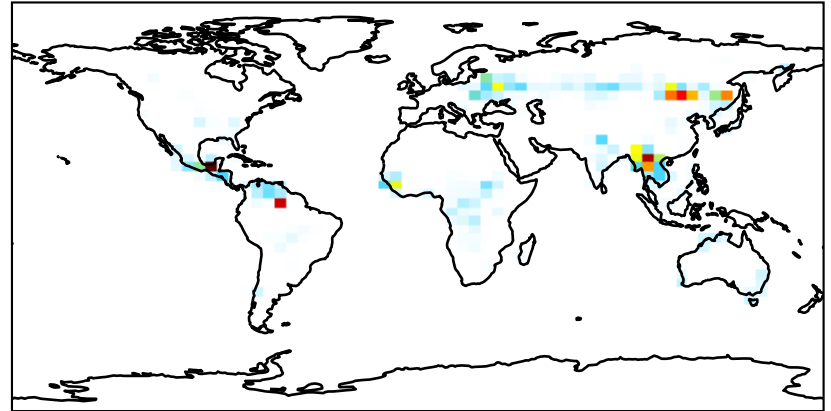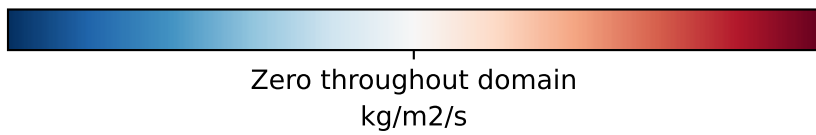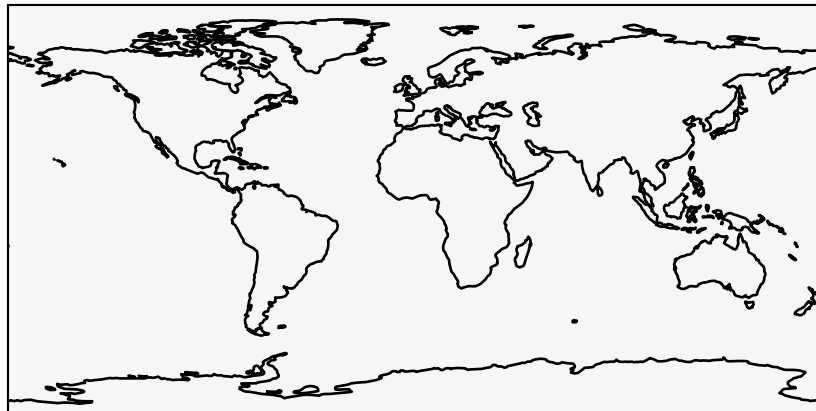Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

unitless

# EmisOCPO_BioBurn (Apr2019)



GCC_14.0.0 (Ref)
4.0x5.0

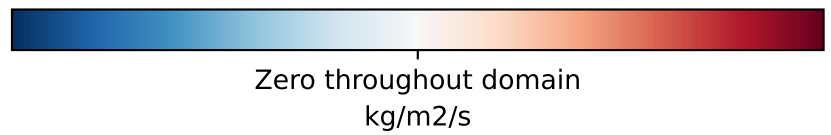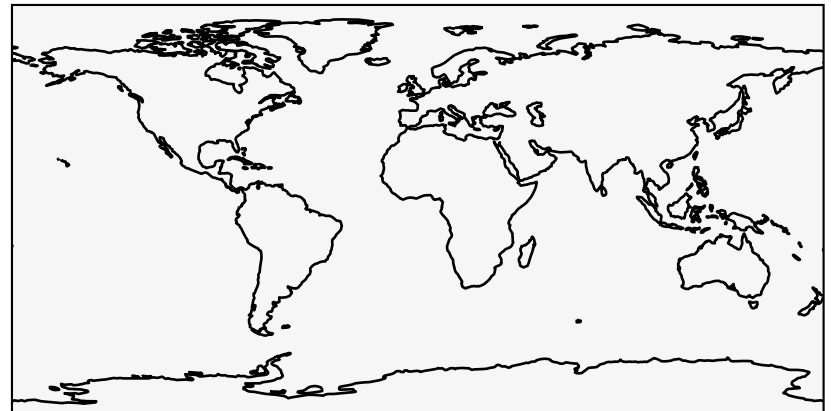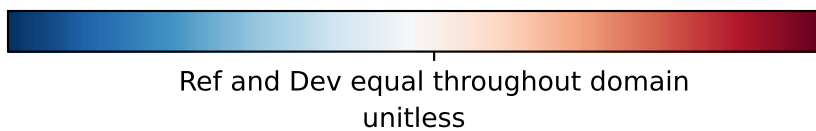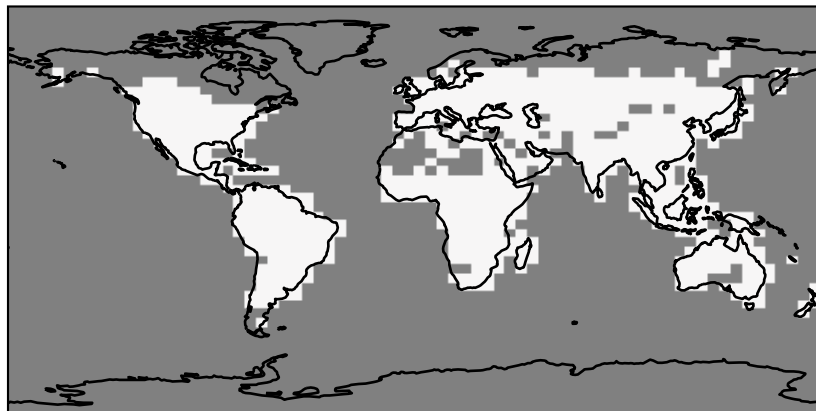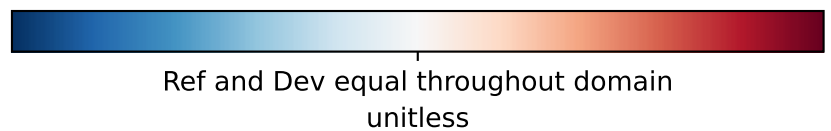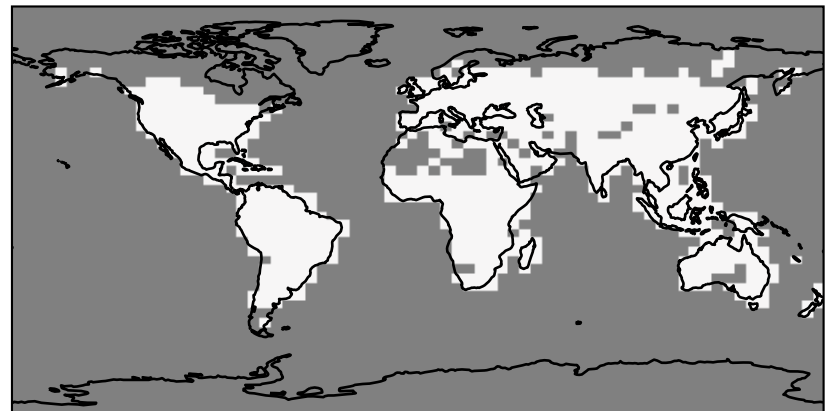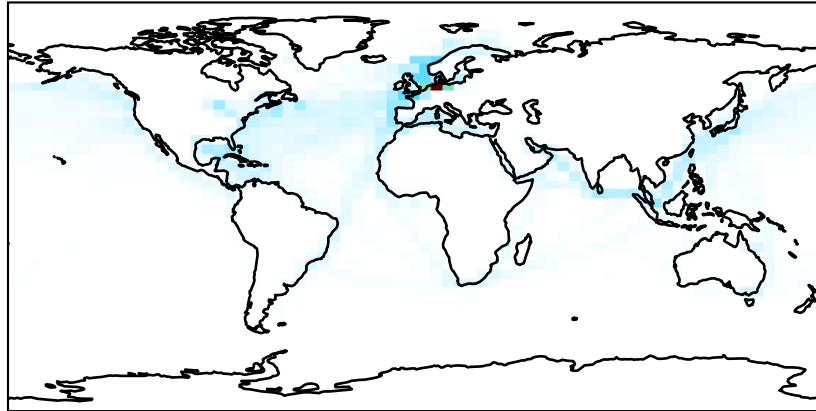GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

1e−11

Difference
Dev - Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless
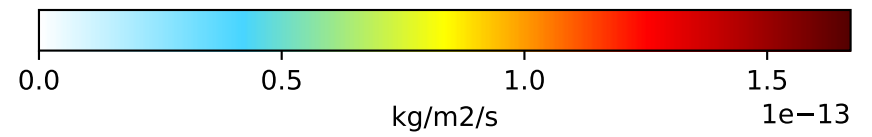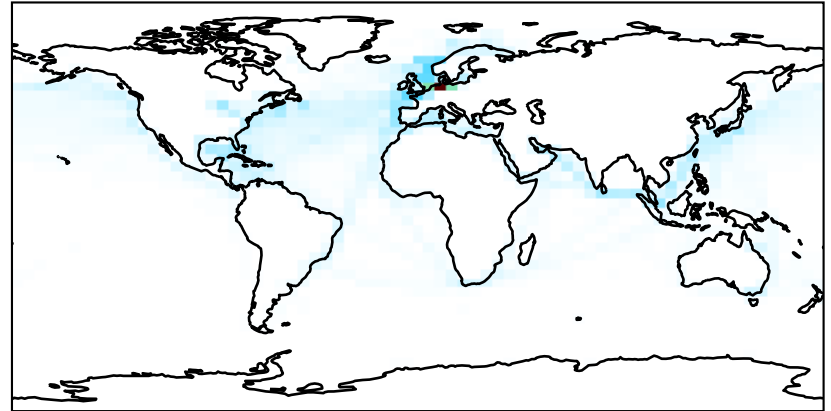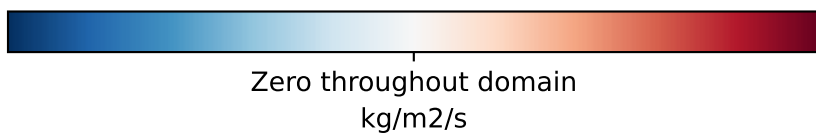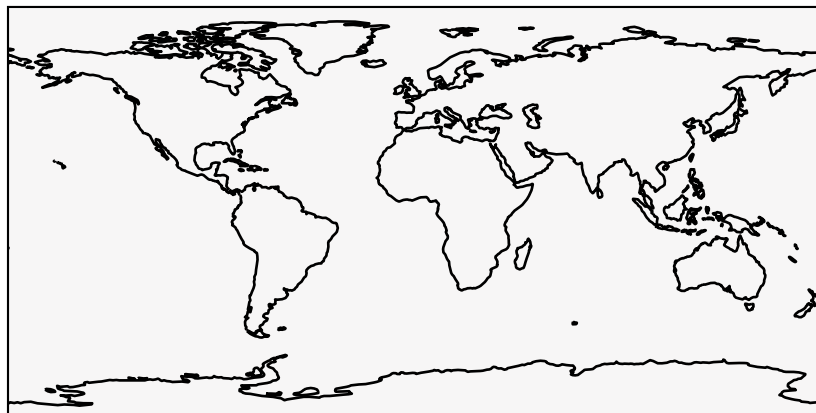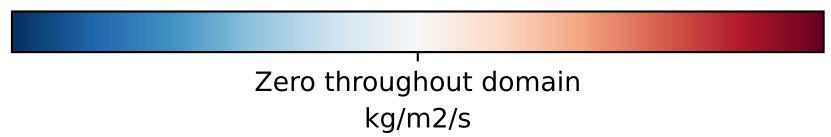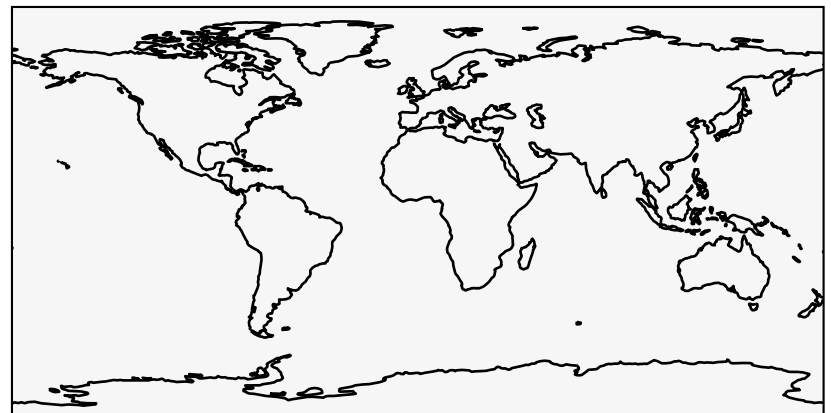
EmisOCPO_Ship (Apr2019)

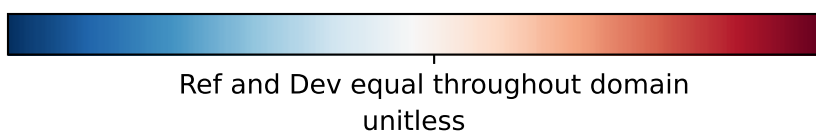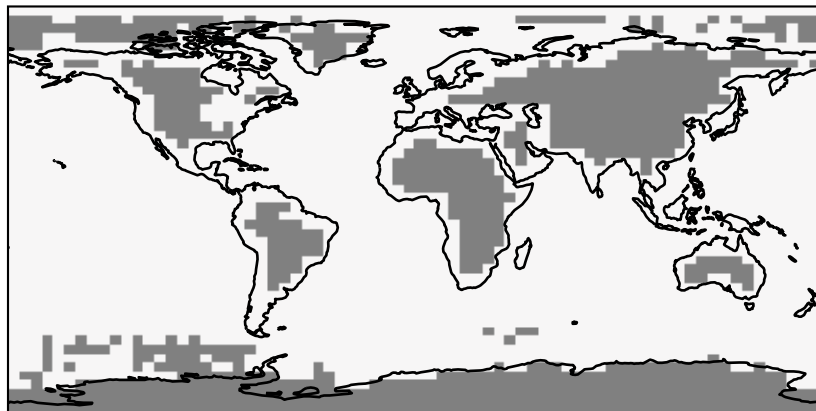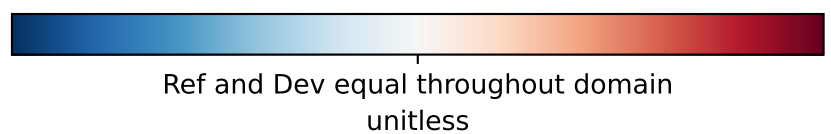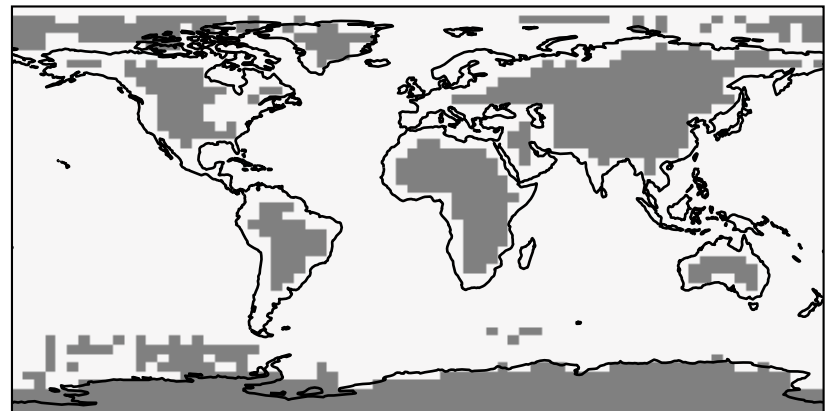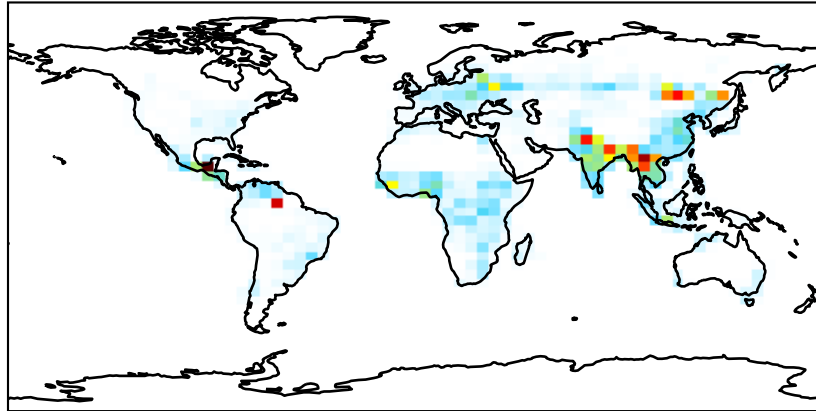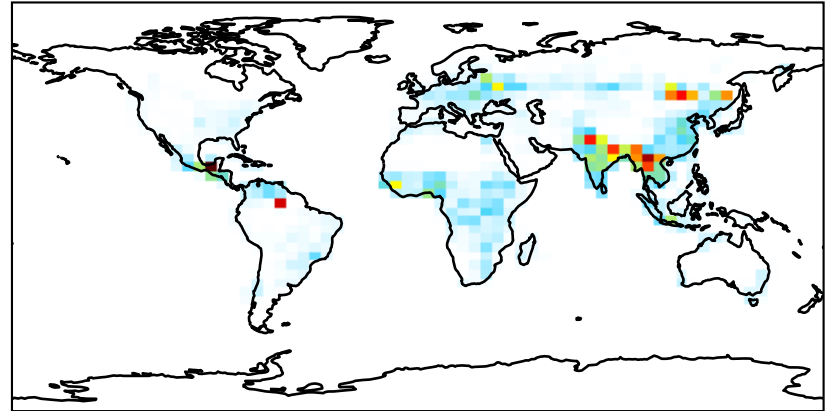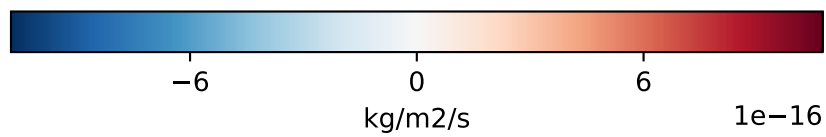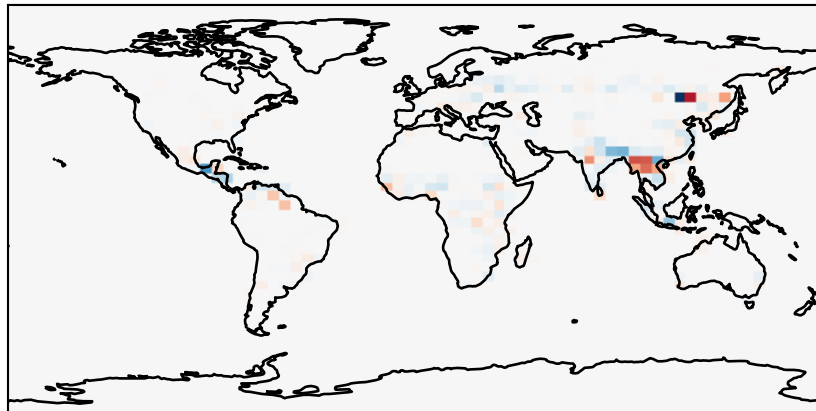GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
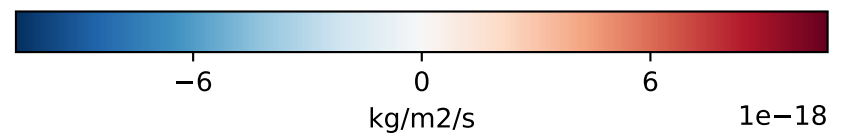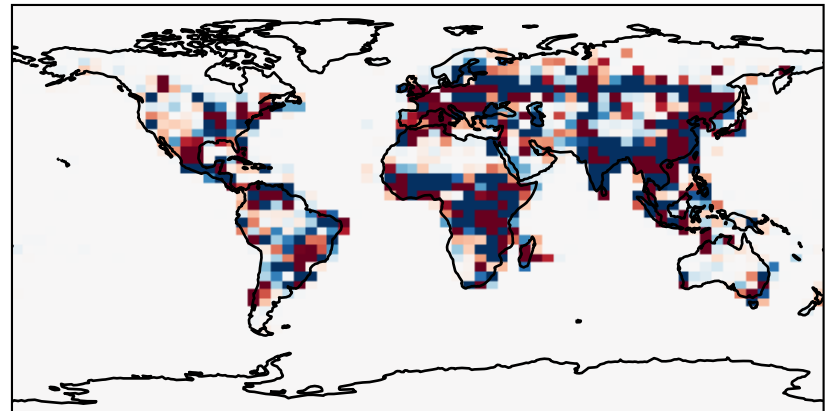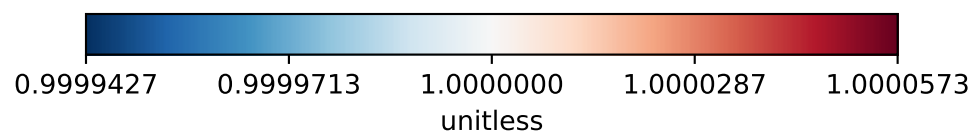unitless

EmisOCPO_Total (Apr2019)

GCC_14.0.0 (Ref)
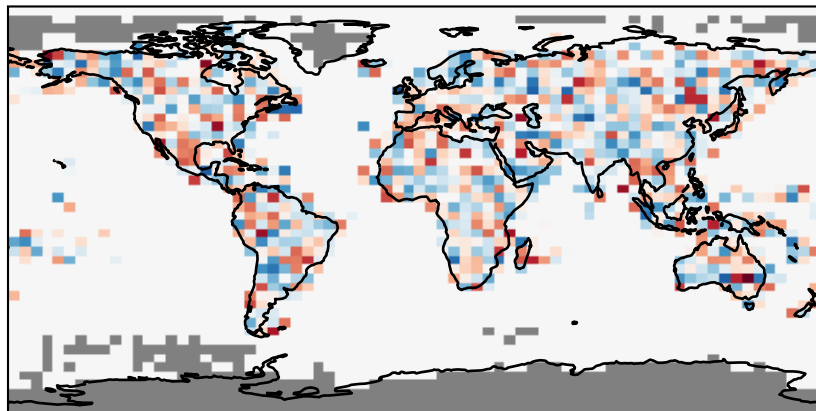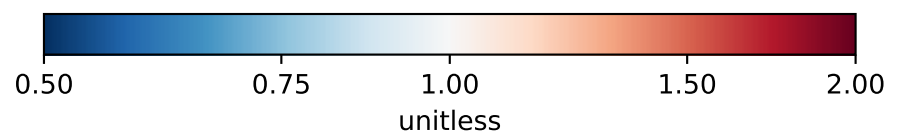4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0
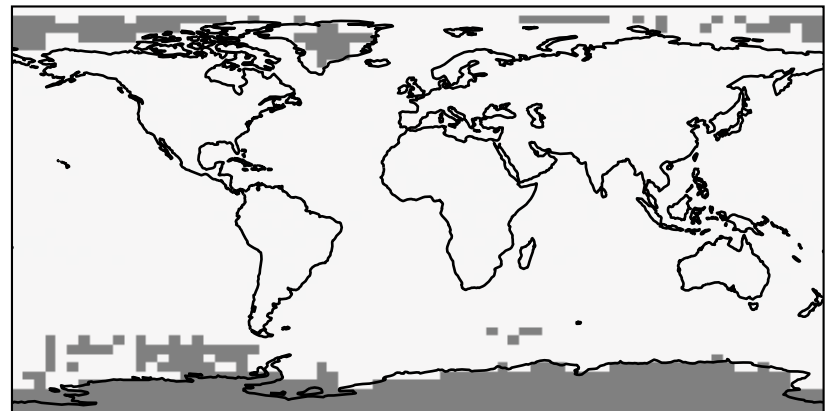
Difference
Dev - Ref, Dynamic Range

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

Ratio
Dev/Ref, Dynamic Range
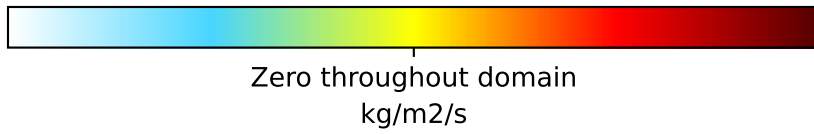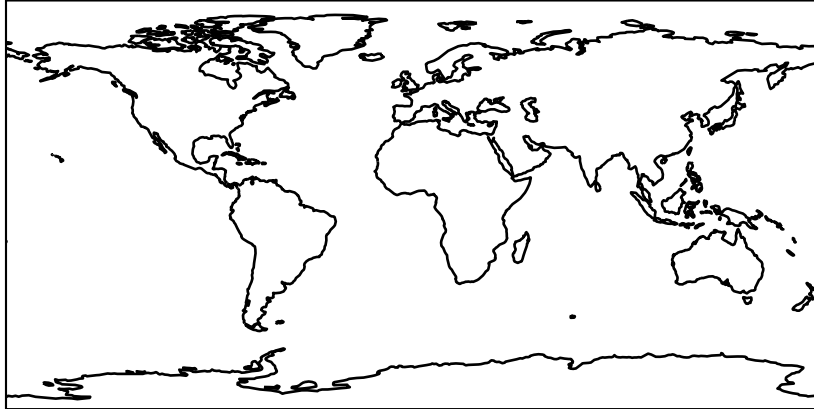
Ratio
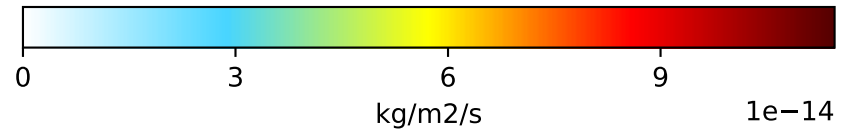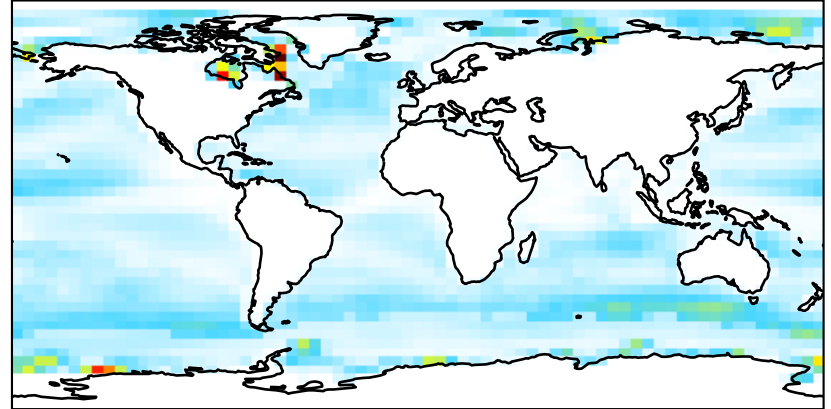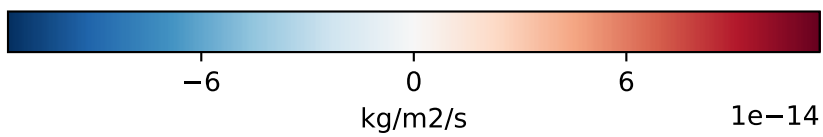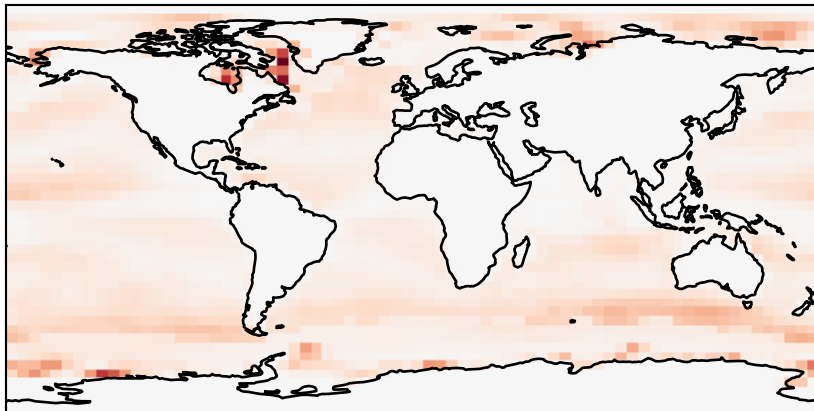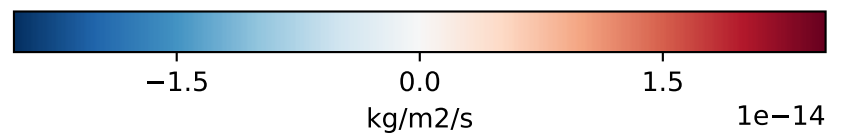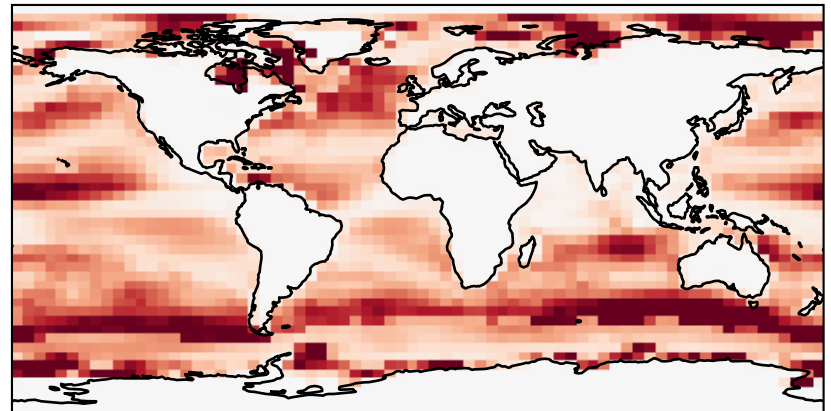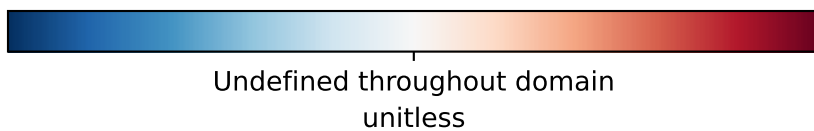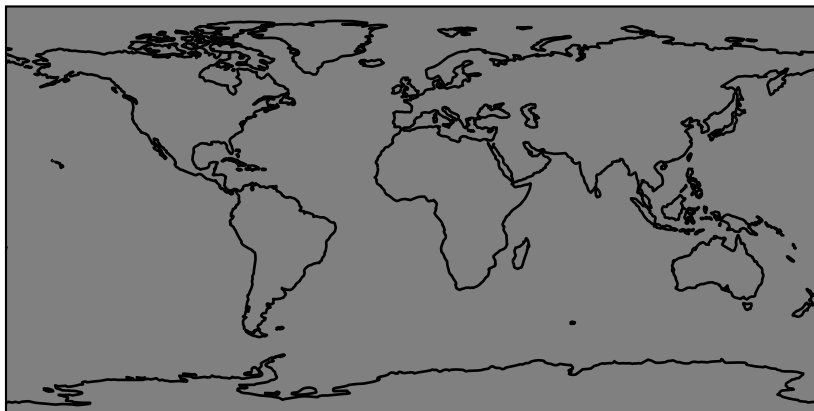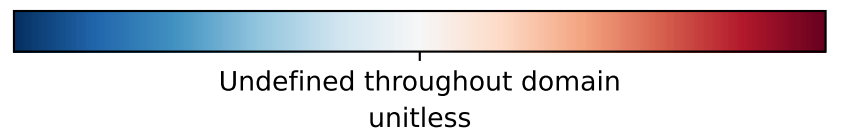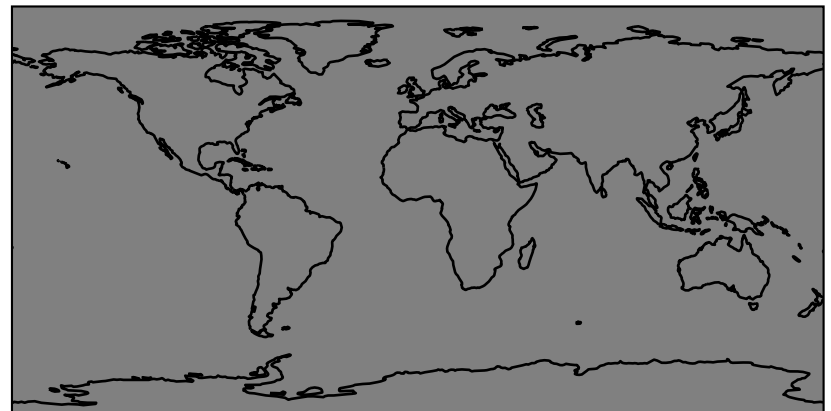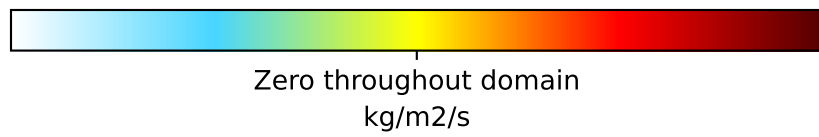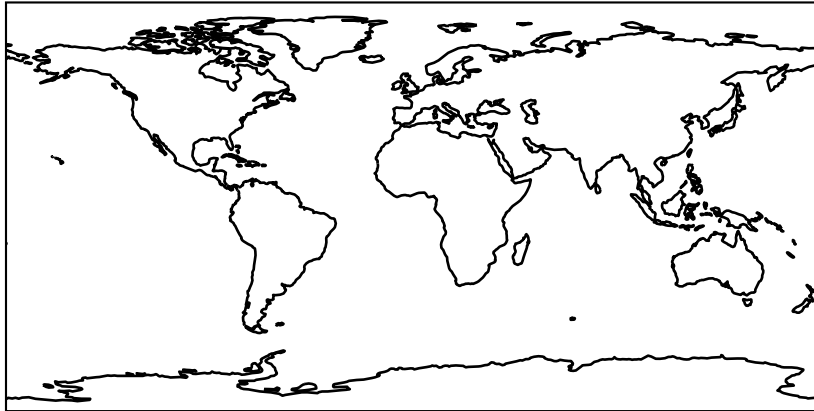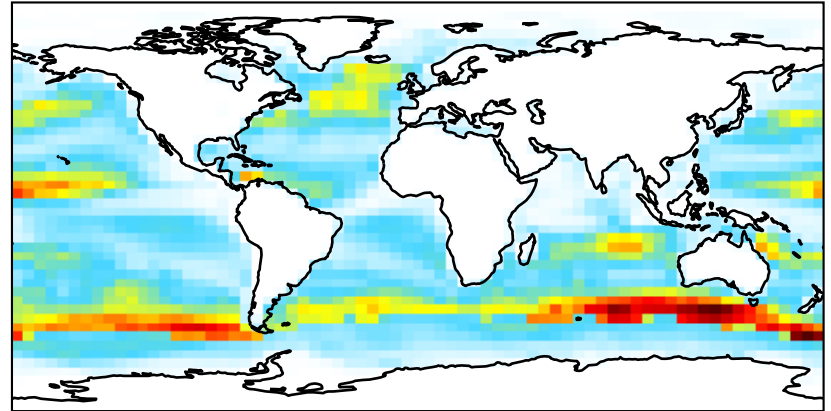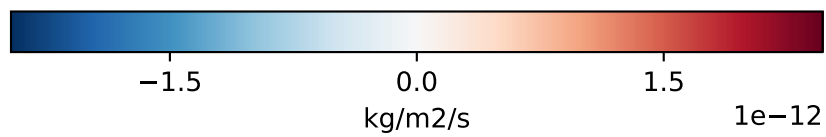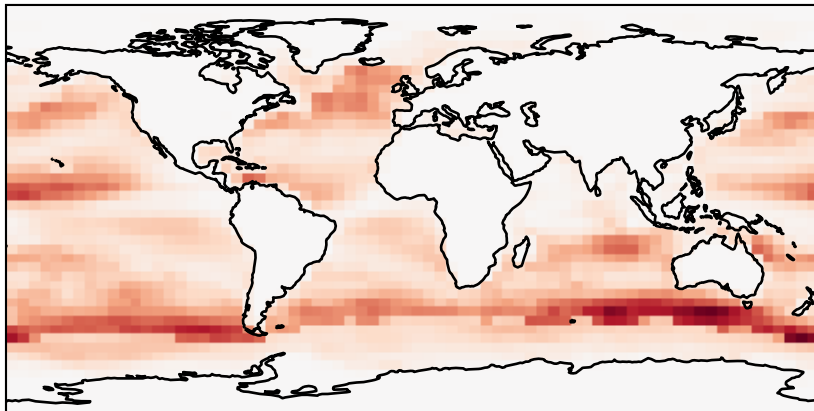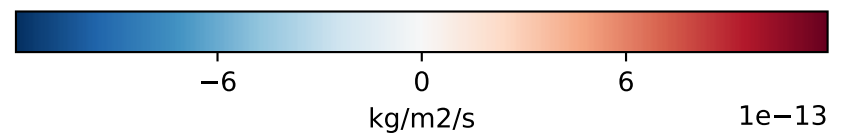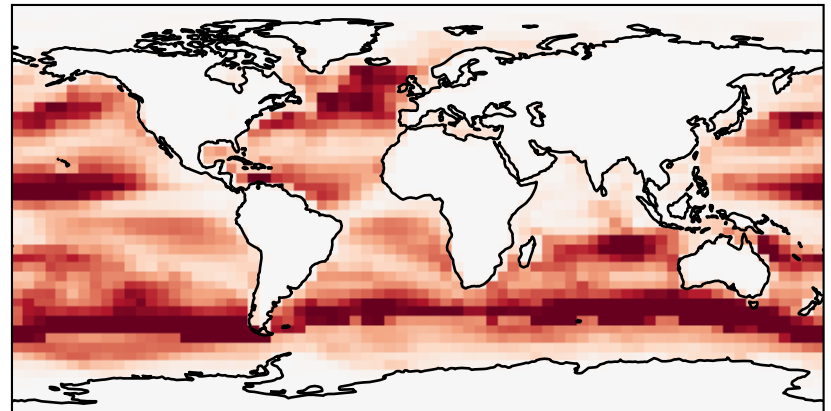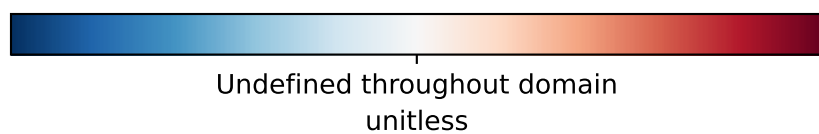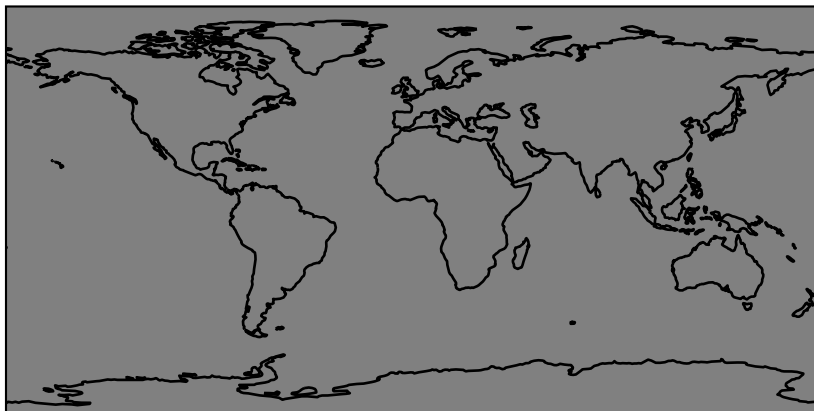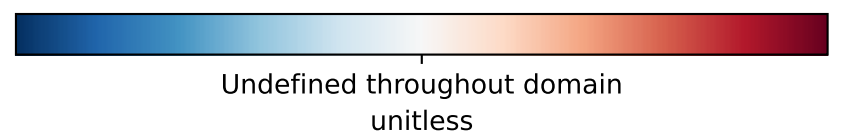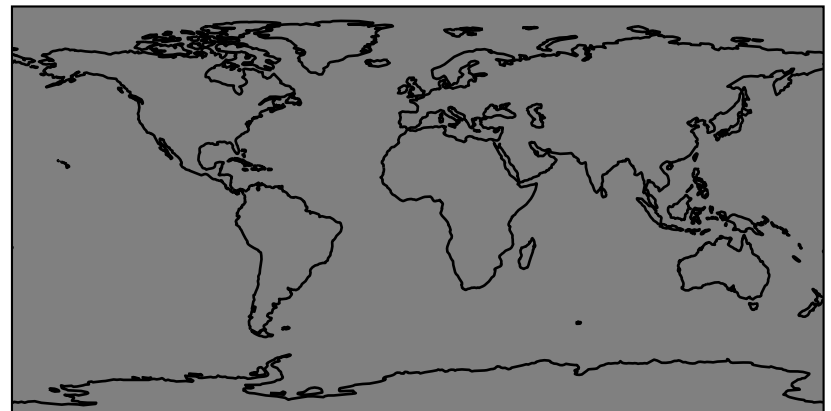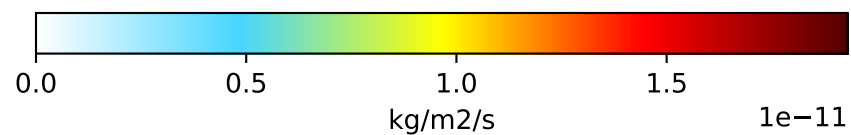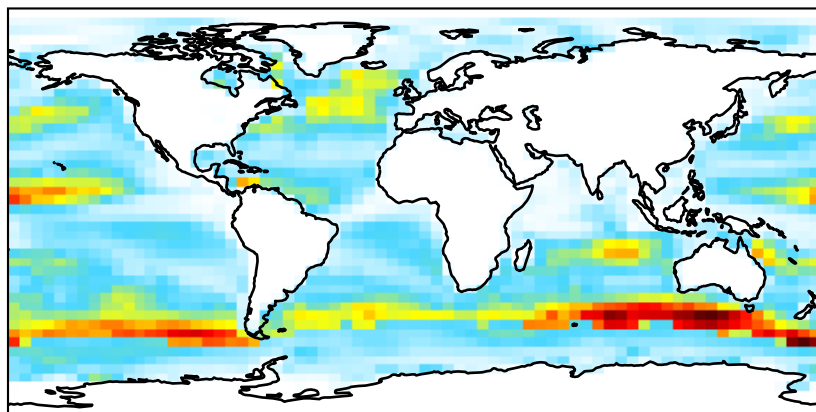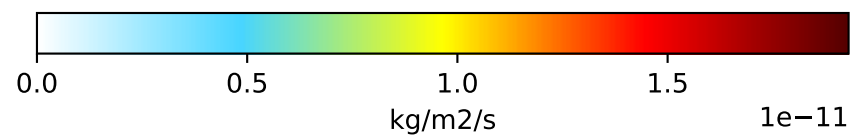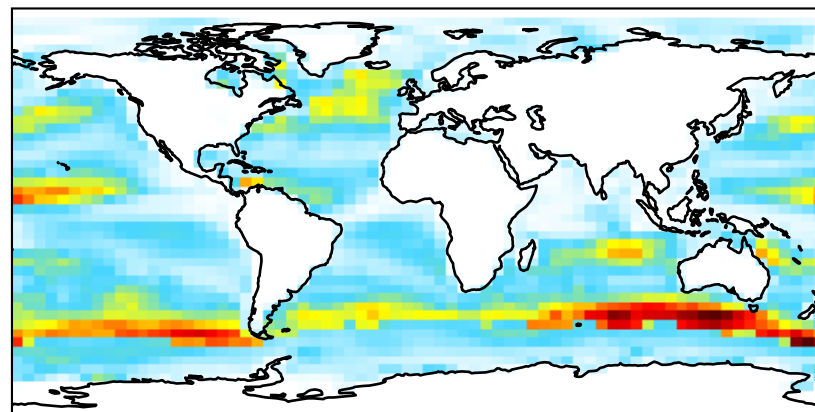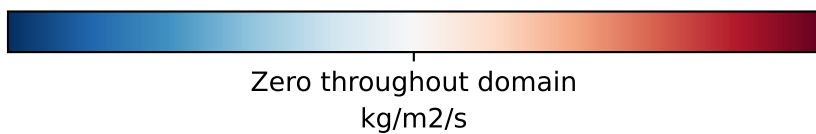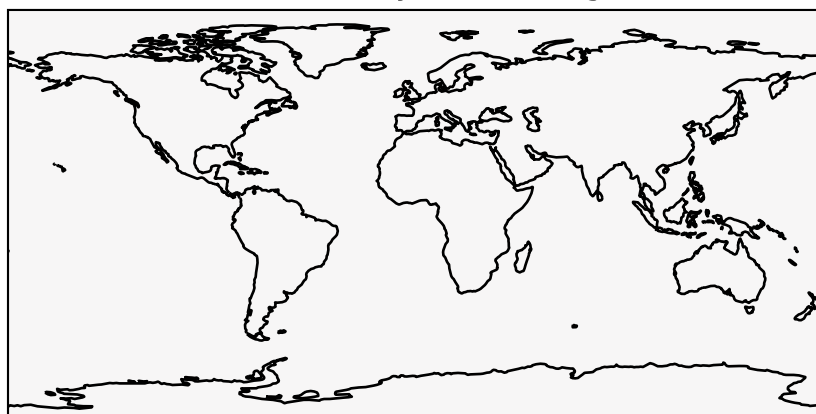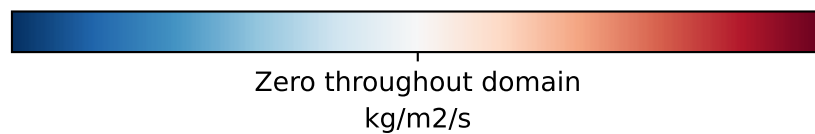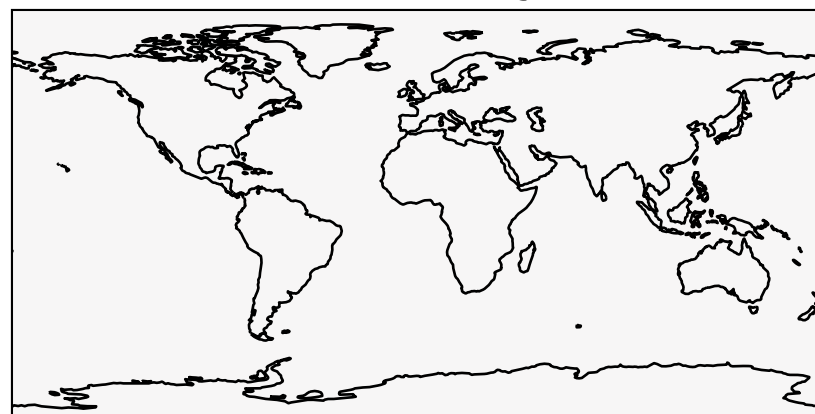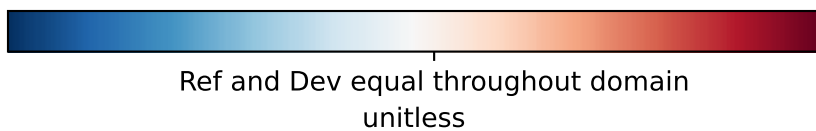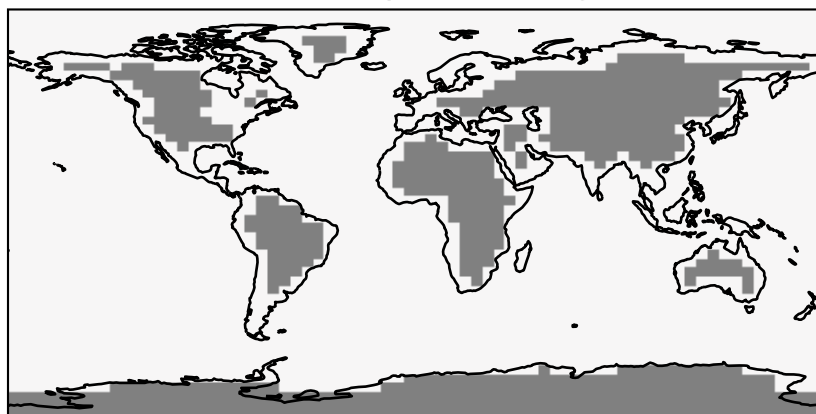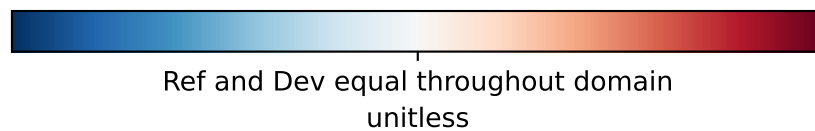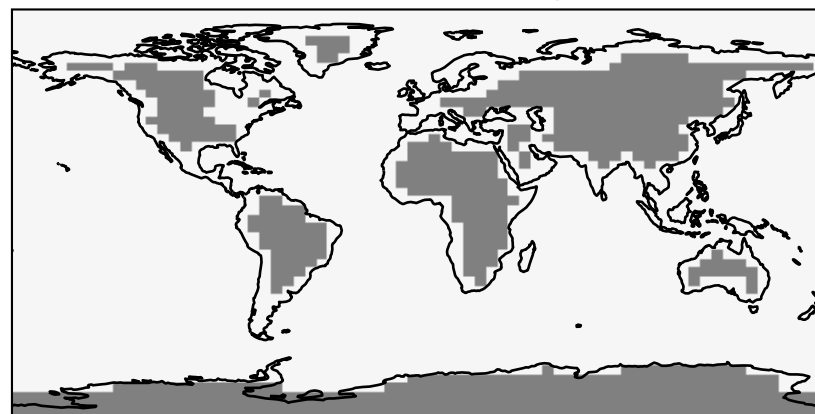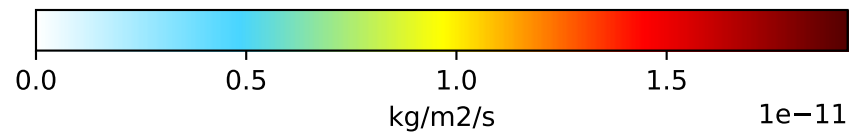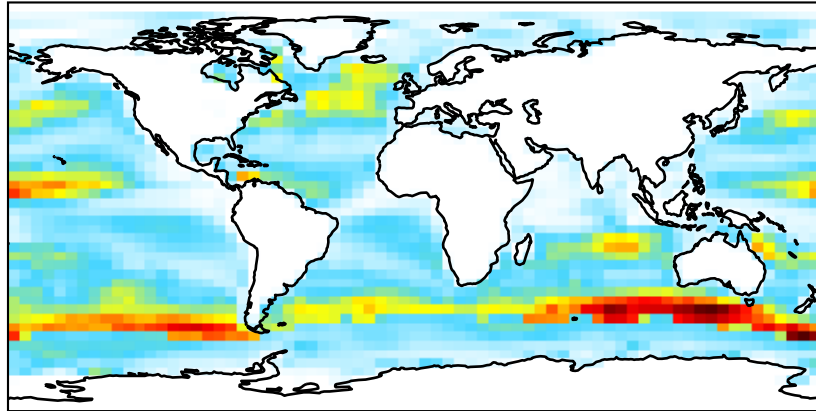Dev/Ref, Fixed Range

# EmisBrSALA_Natural (Apr2019)

EmisBrSALC_Natural (Apr2019)

# EmisSALA_Natural (Apr2019)

## GCC_14.0.0 (Ref)
### 4.0x5.0

## GCC_14.2.0 (Dev)
### 4.0x5.0

kg/m2/s

kg/m2/s

## Difference
### Dev - Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s

## Ratio
### Dev/Ref, Dynamic Range

## Ratio
### Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless
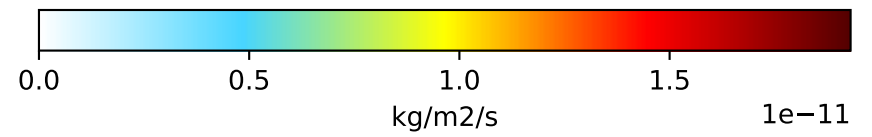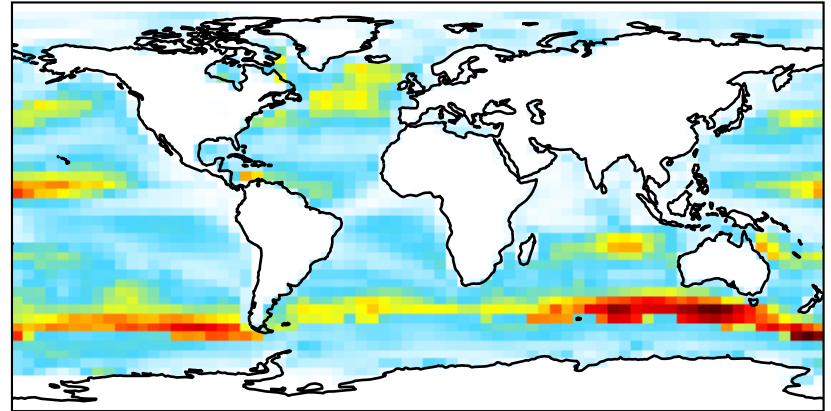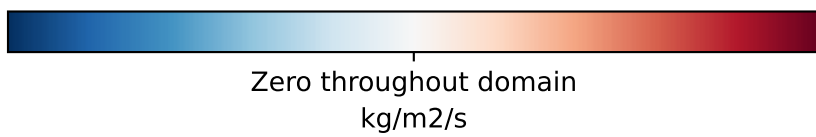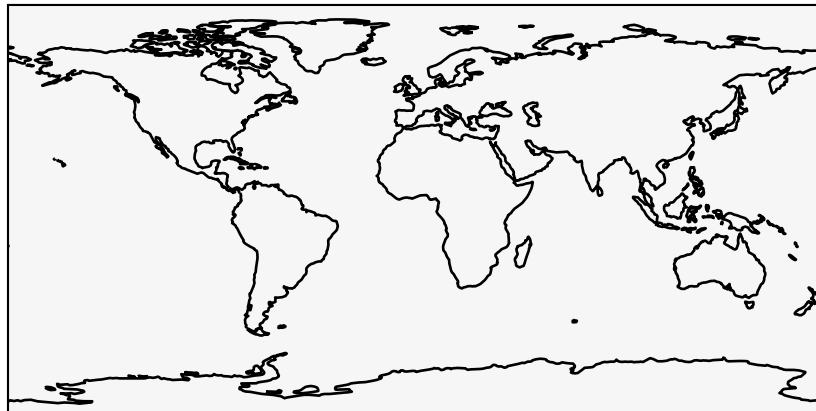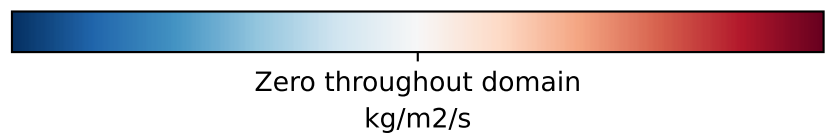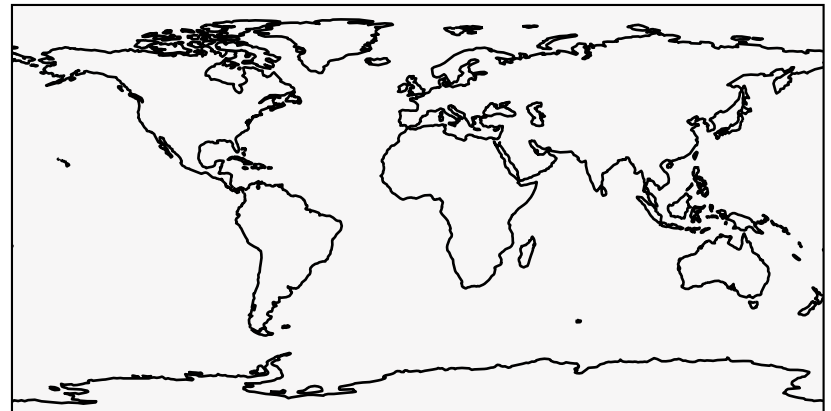
# EmisSALAAL_Natural (Apr2019)



GCC_14.0.0 (Ref)
4.0x5.0
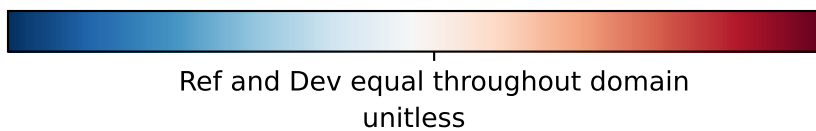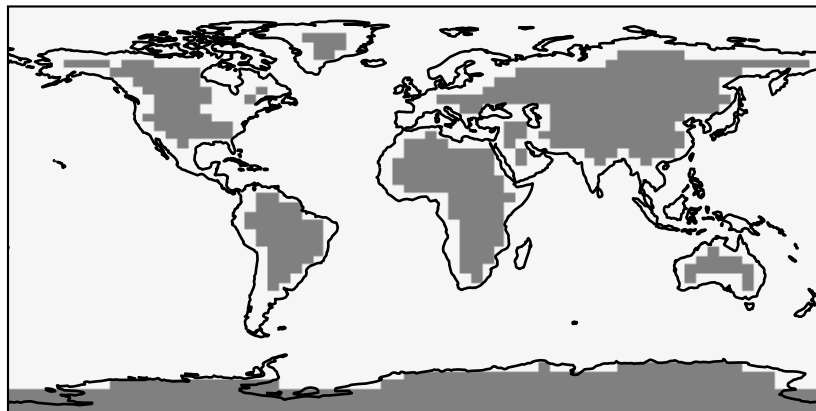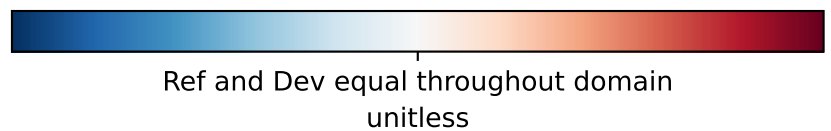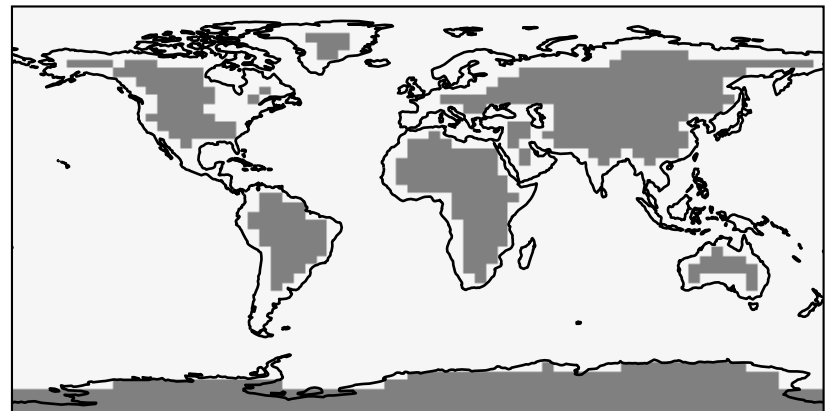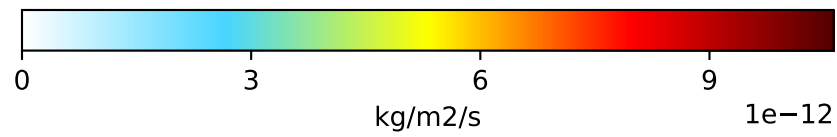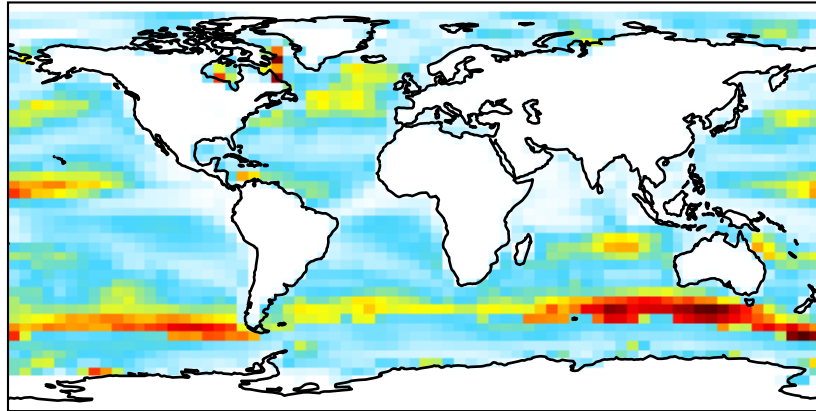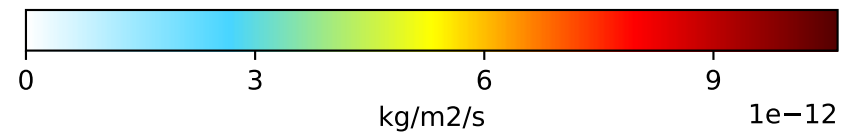
GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

kg/m2/s

Difference
Dev - Ref, Dynamic Range

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

Zero throughout domain
kg/m2/s

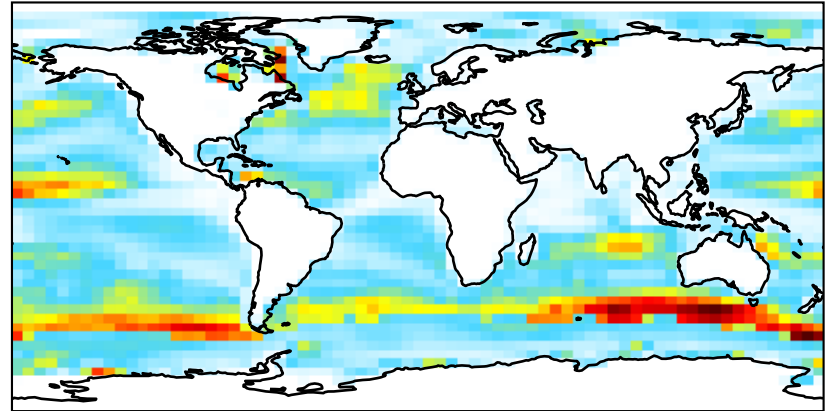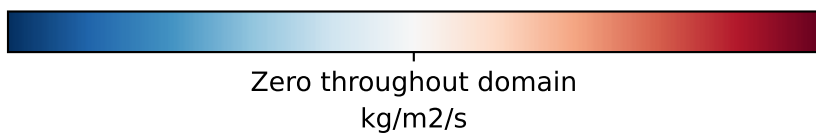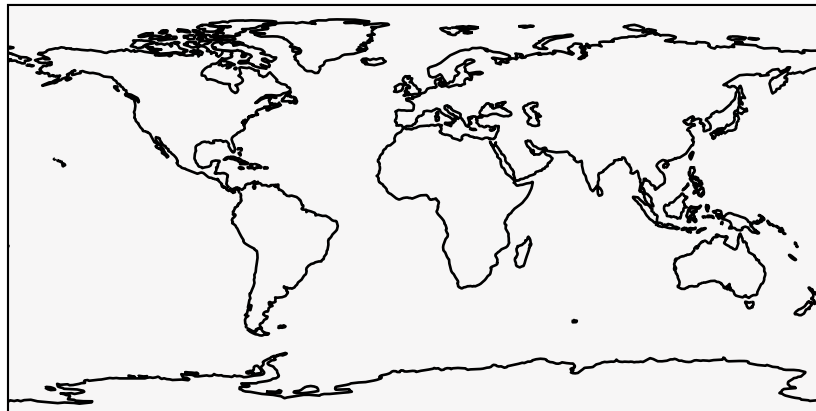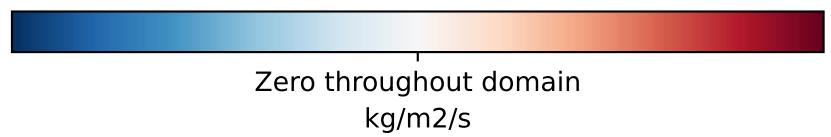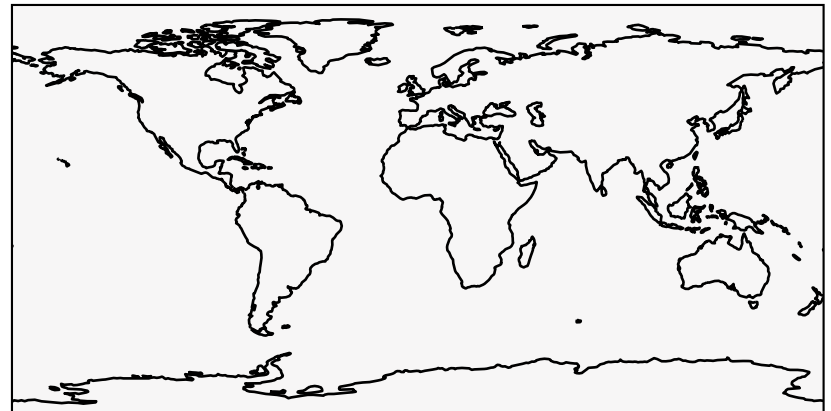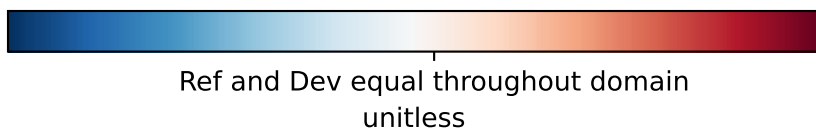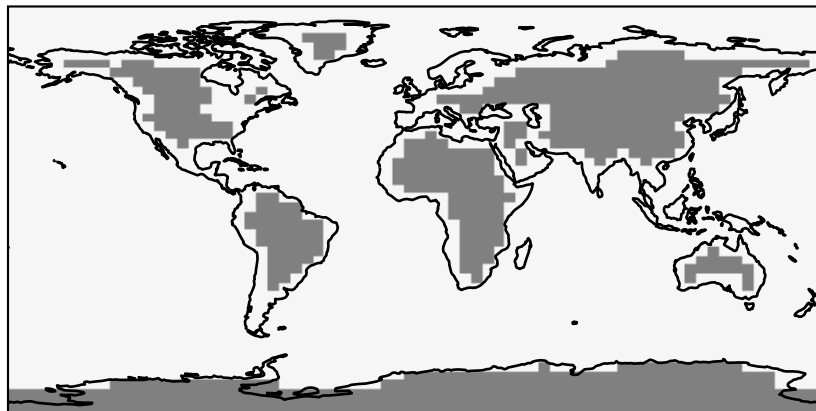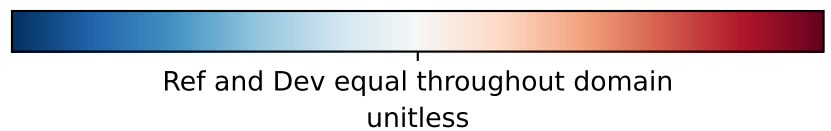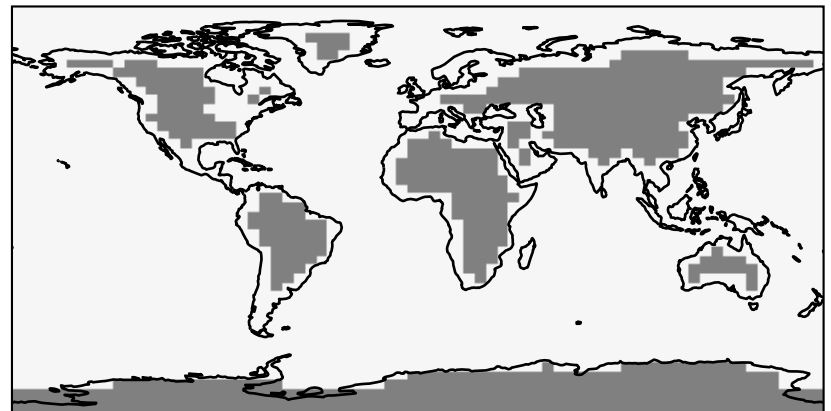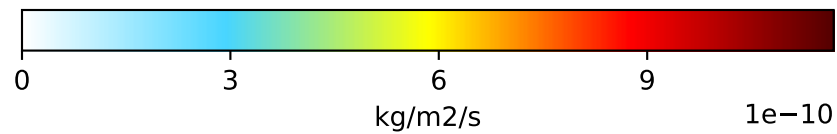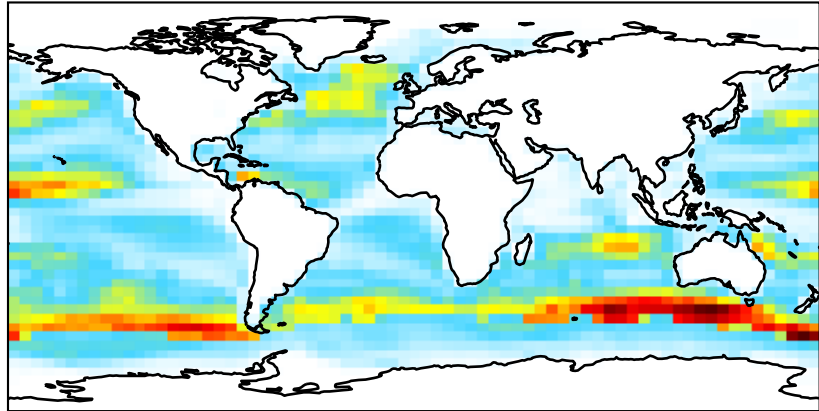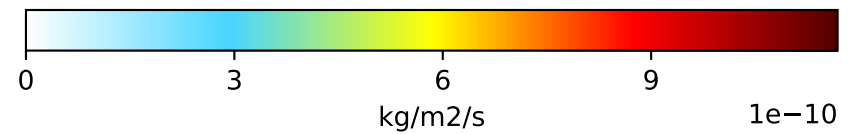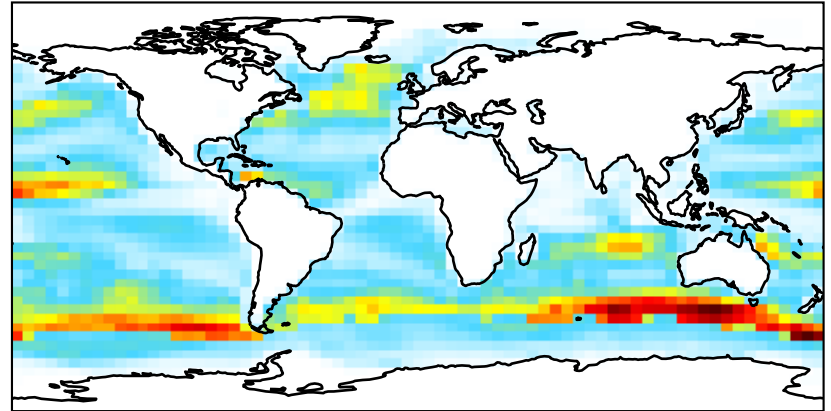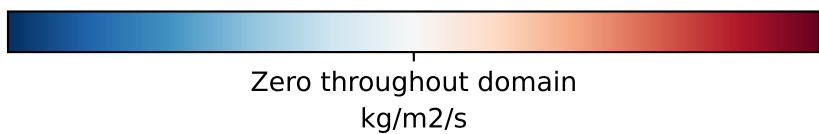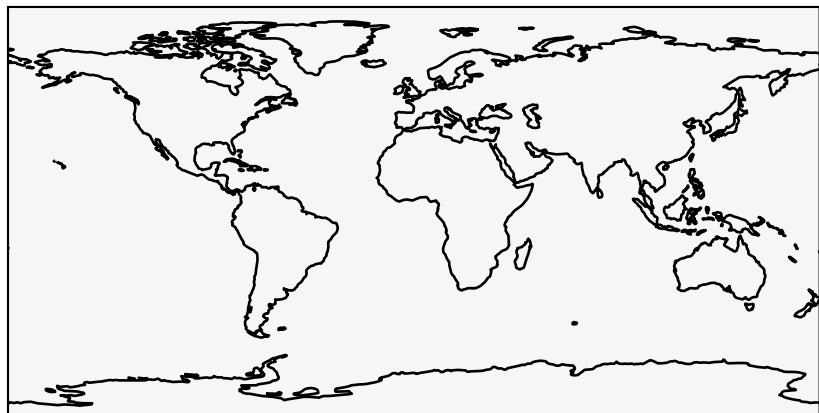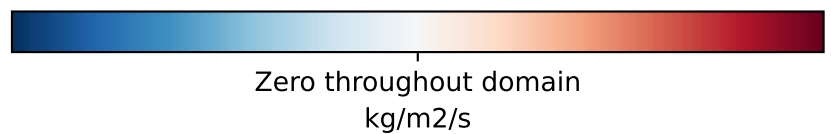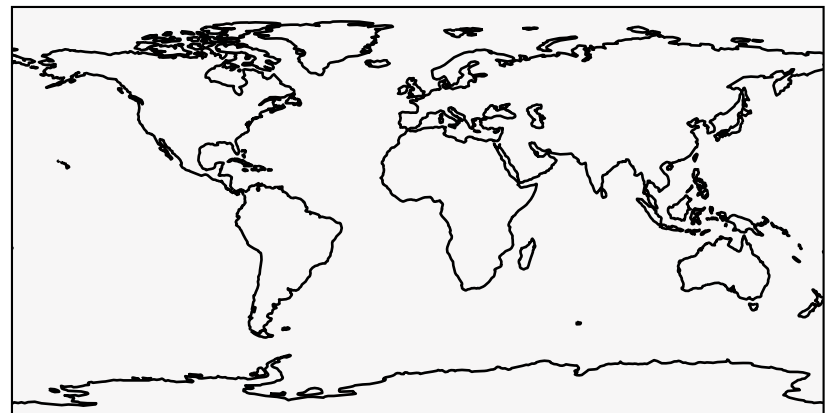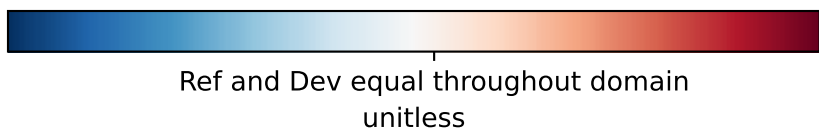Zero throughout domain
kg/m2/s

Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

# EmisSALACL_Natural (Apr2019)

# EmisSALC_Natural (Apr2019)

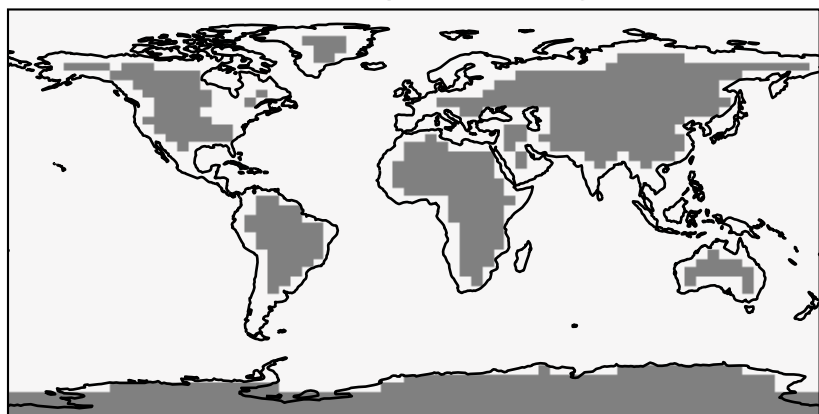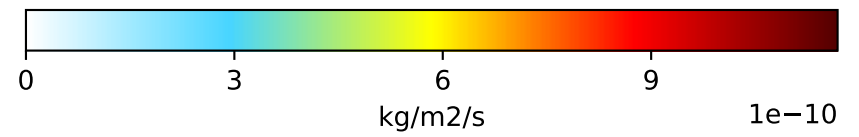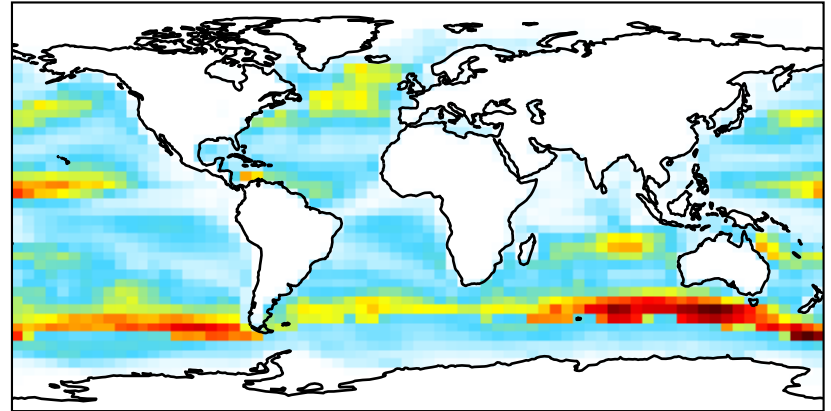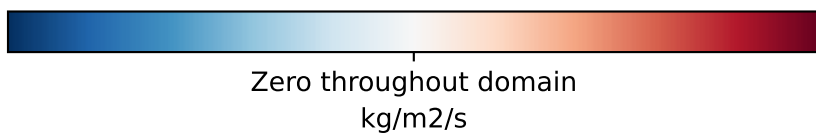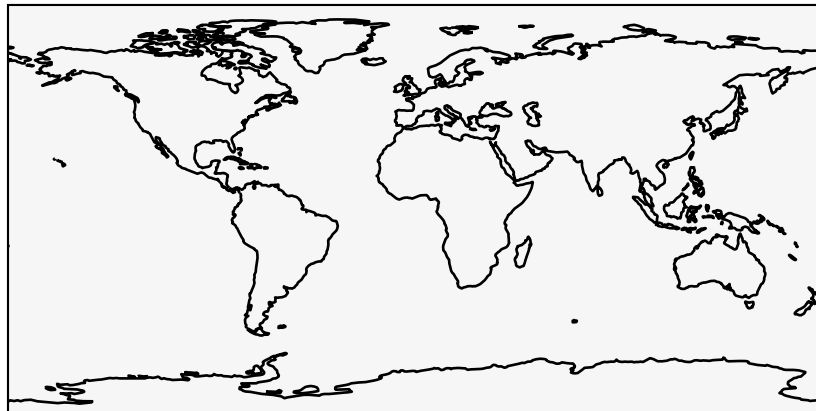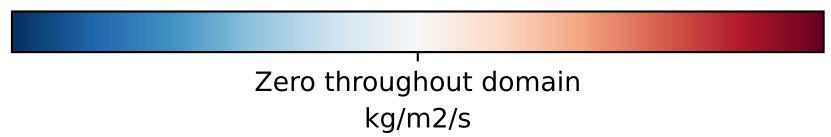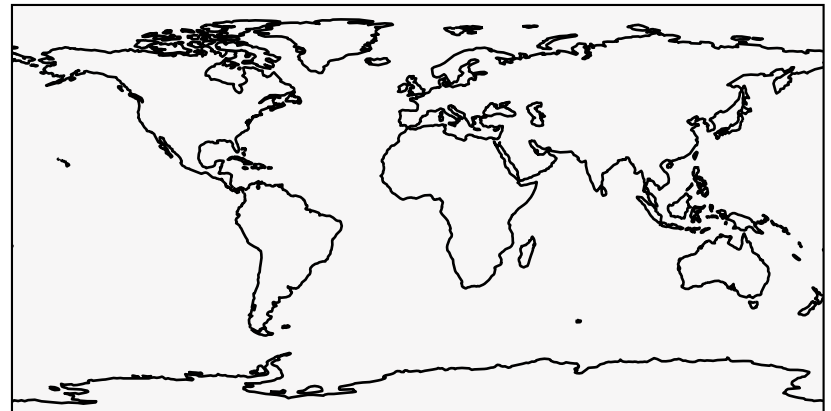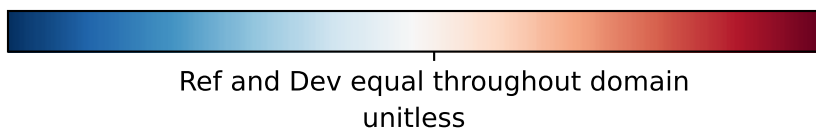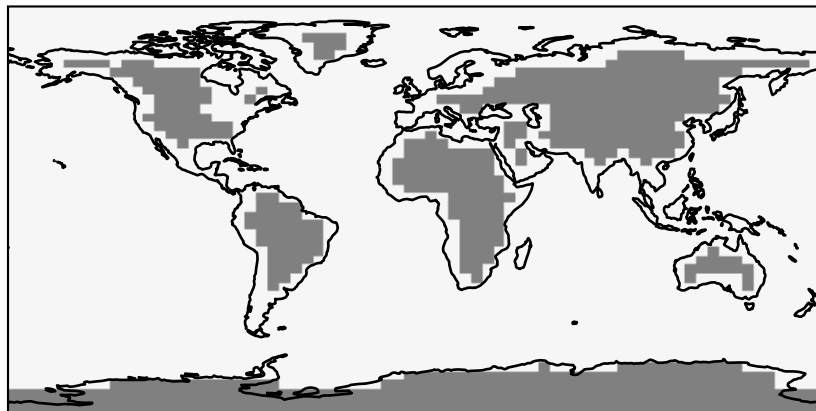# EmisSALCAL_Natural (Apr2019)

GCC_14.0.0 (Ref)
4.0x5.0

GCC_14.2.0 (Dev)
4.0x5.0

kg/m2/s

1e−10

kg/m2/s

1e−10

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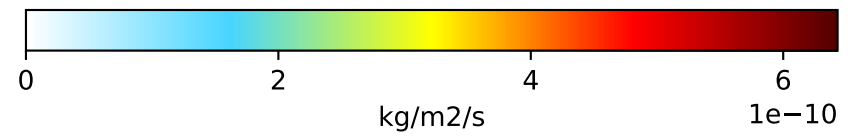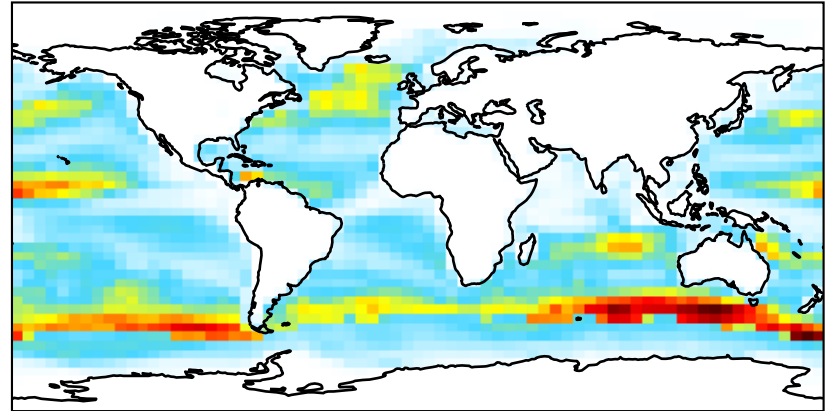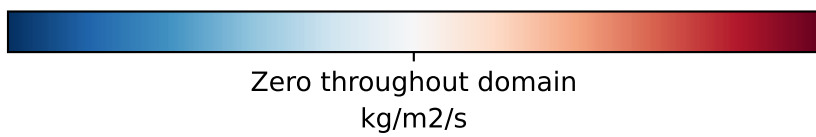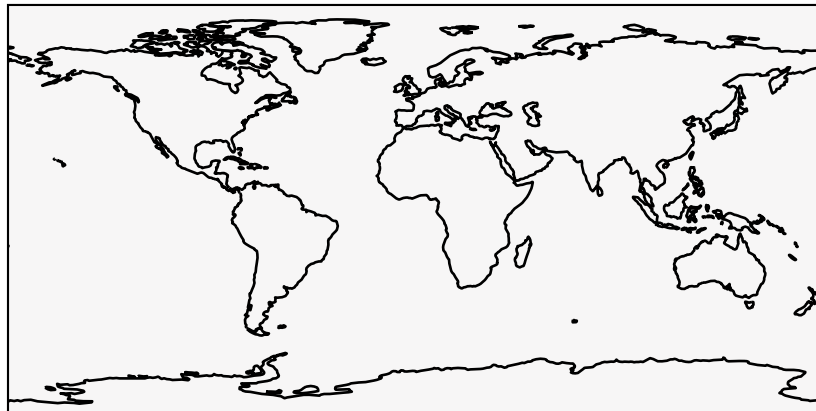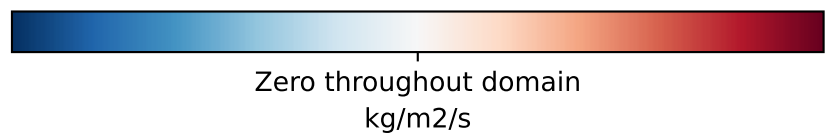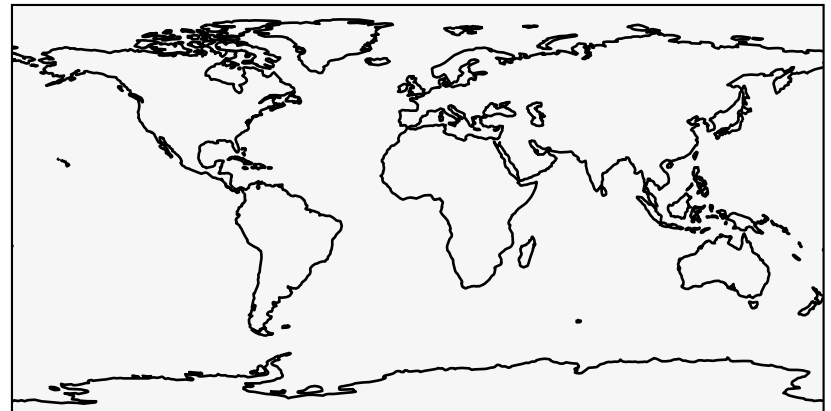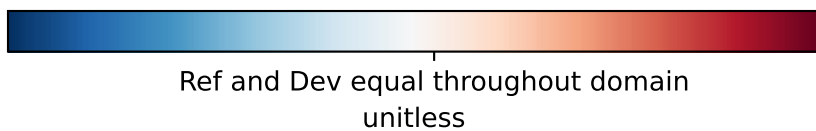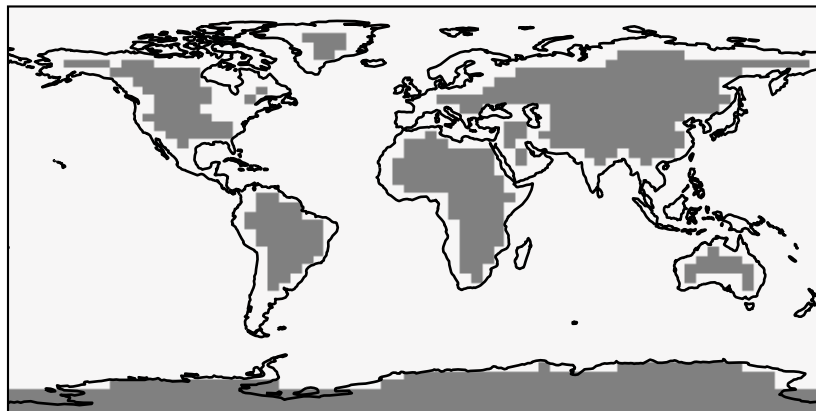
Difference
Dev - Ref, Restricted Range [5%,95%]

Zero throughout domain
kg/m2/s

Zero throughout domain
kg/m2/s
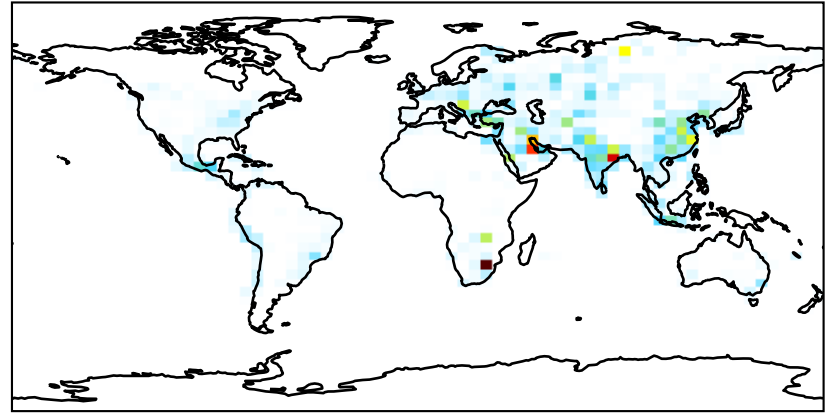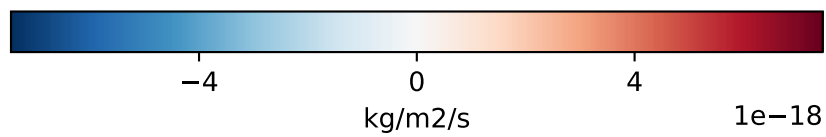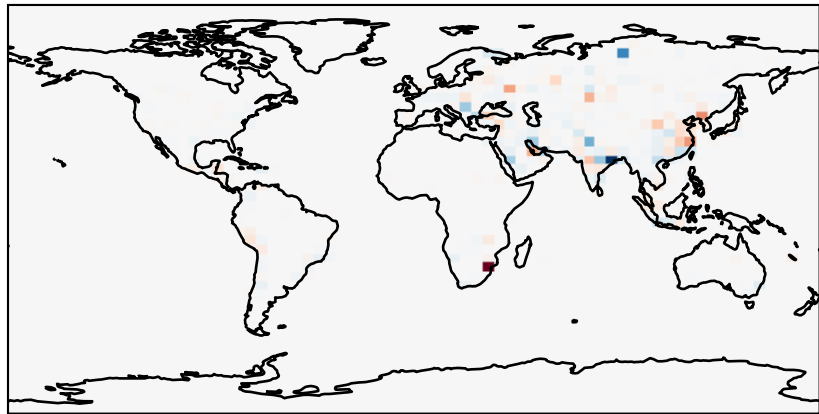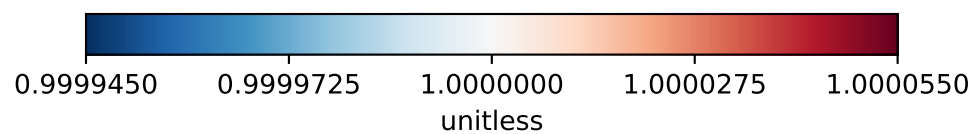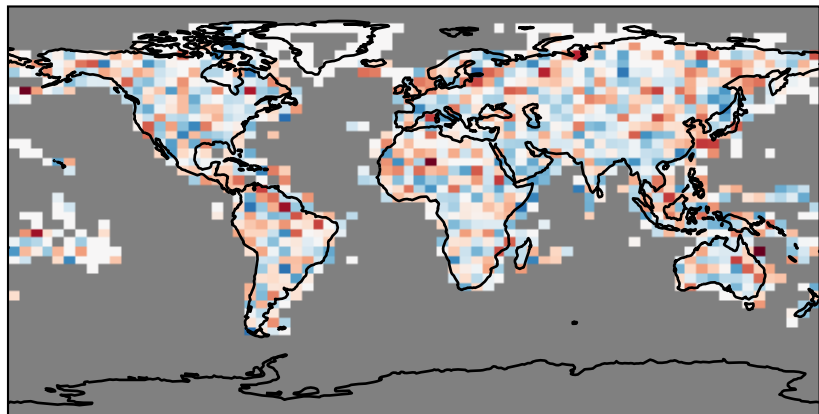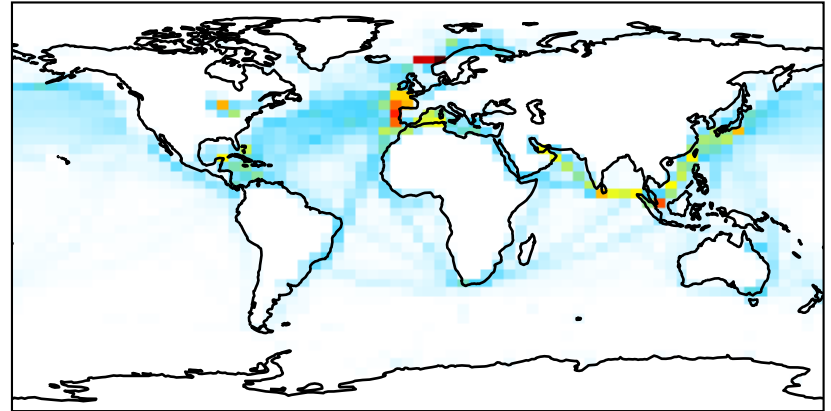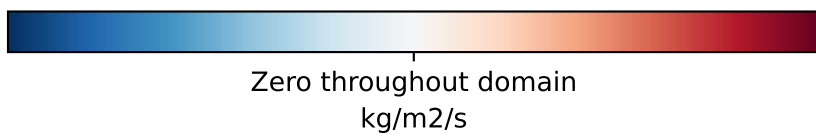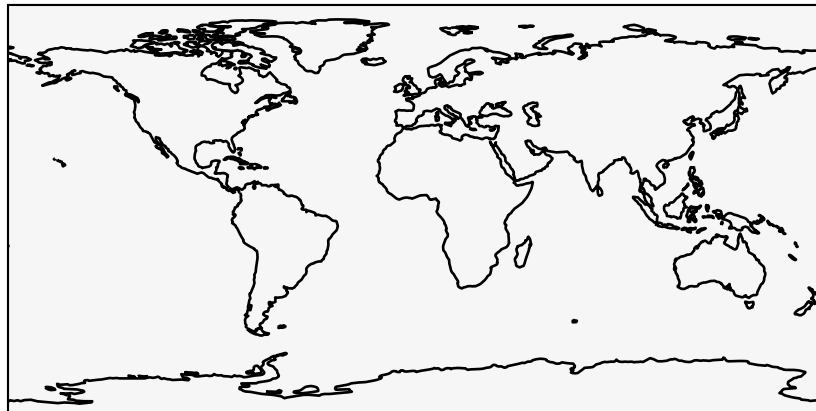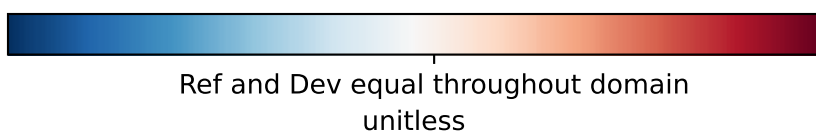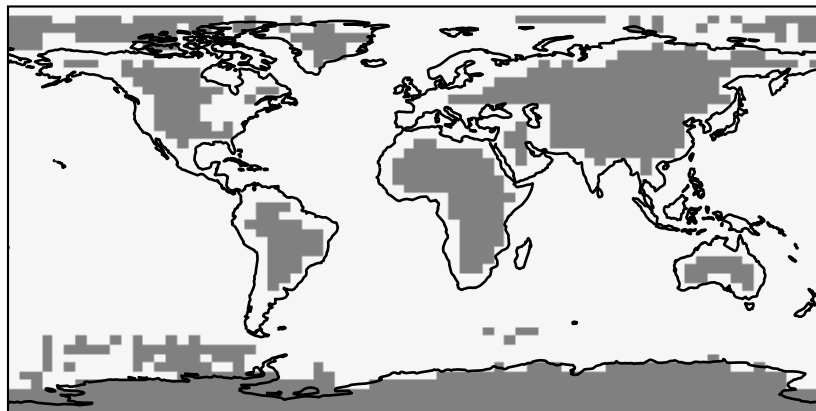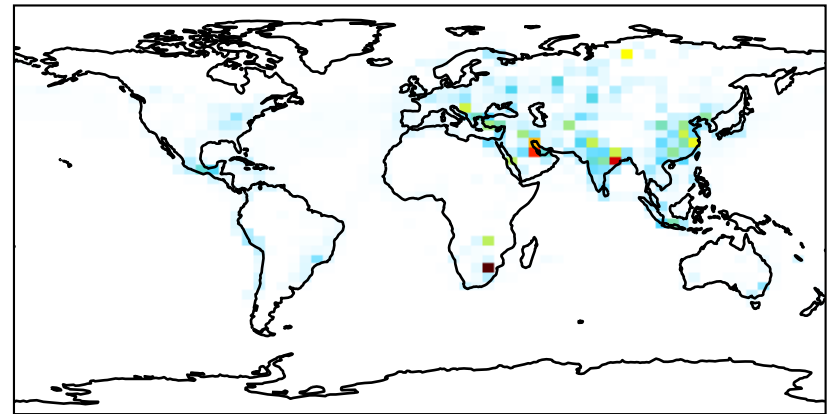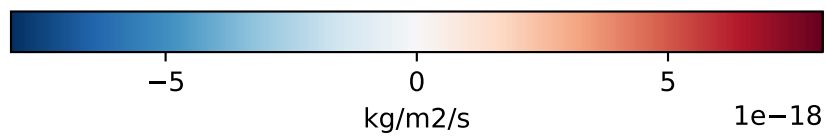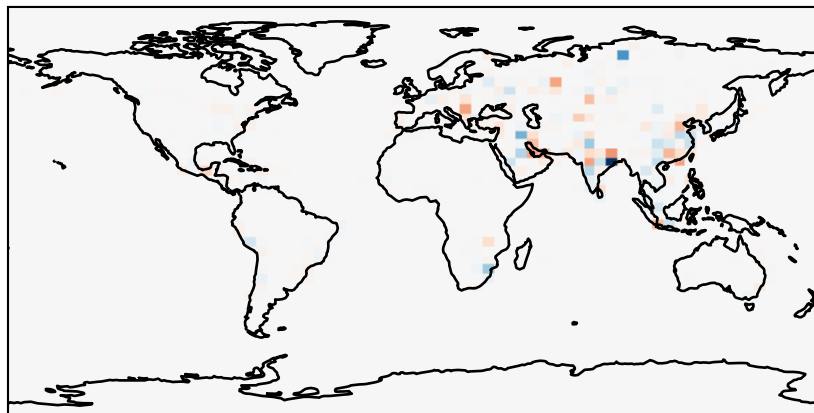
Ratio
Dev/Ref, Dynamic Range

Ratio
Dev/Ref, Fixed Range

Ref and Dev equal throughout domain
unitless

Ref and Dev equal throughout domain
unitless

# EmisSALCCL_Natural (Apr2019)

EmispFe_Anthro (Apr2019)

# EmispFe_Ship (Apr2019)

# EmispFe_Total (Apr2019)