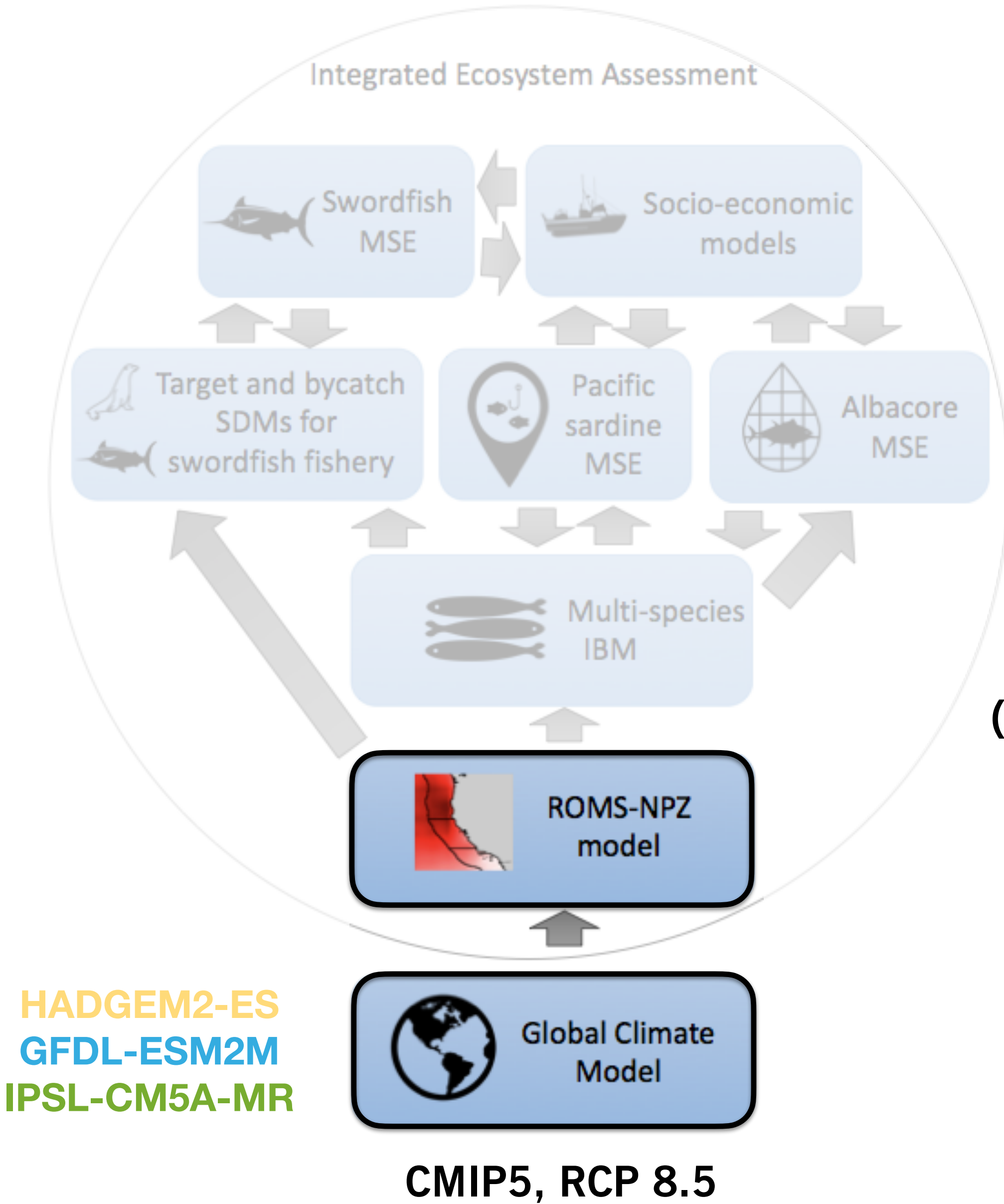
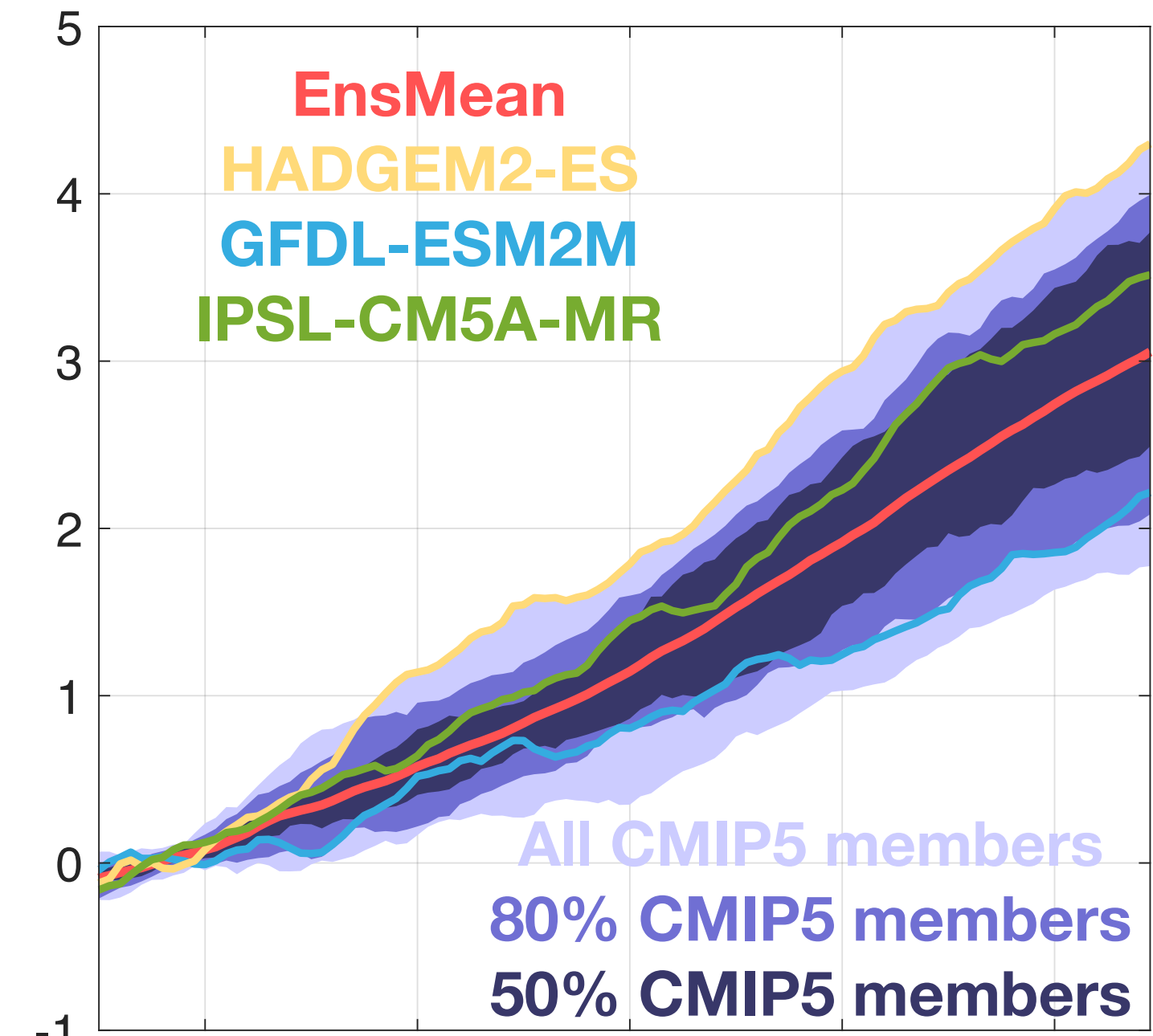


A DYNAMICALLY DOWNSCALED ENSEMBLE OF FUTURE PROJECTIONS FOR THE CALIFORNIA CURRENT SYSTEM

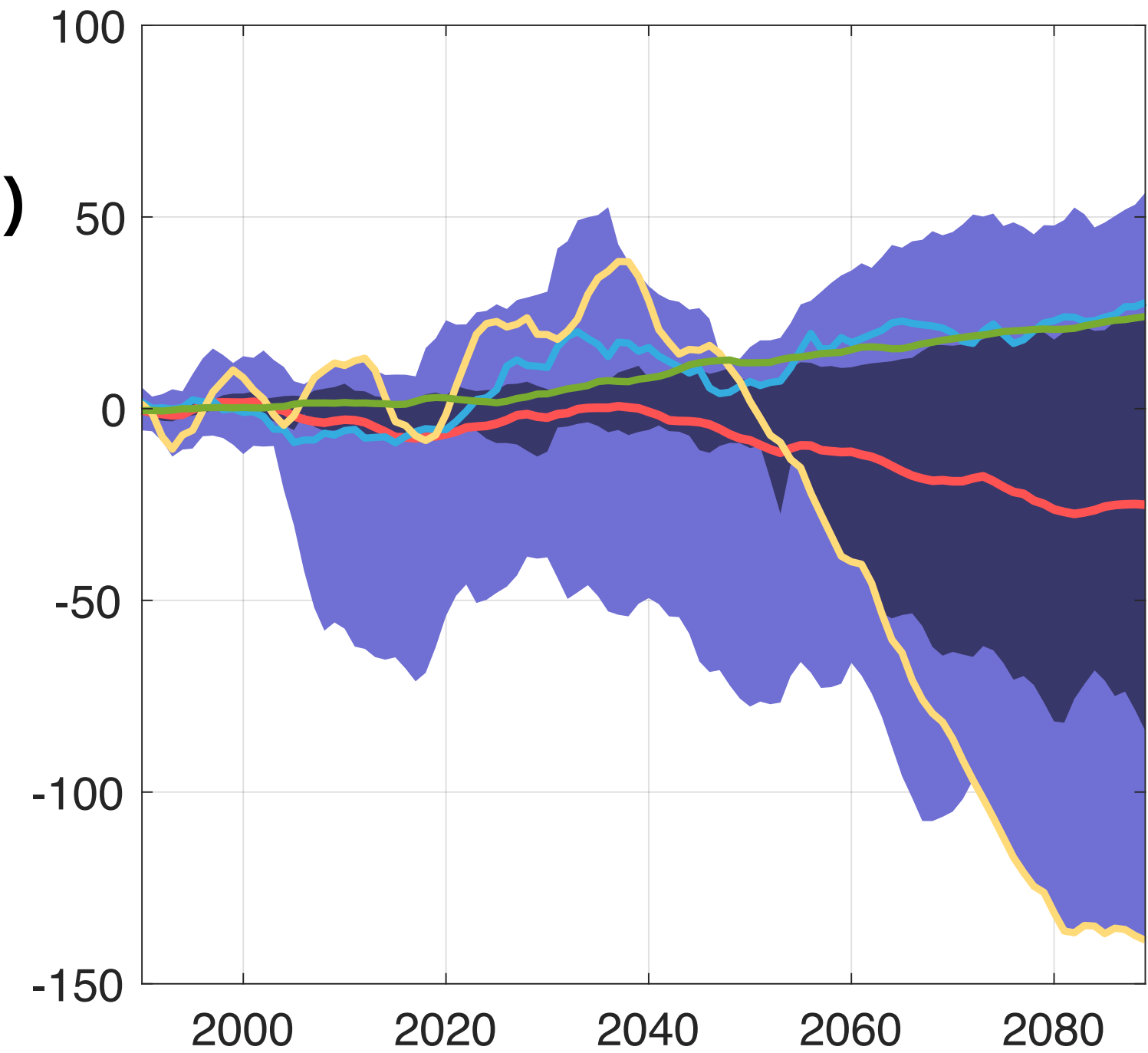
Mercedes (Mer) Pozo Buil

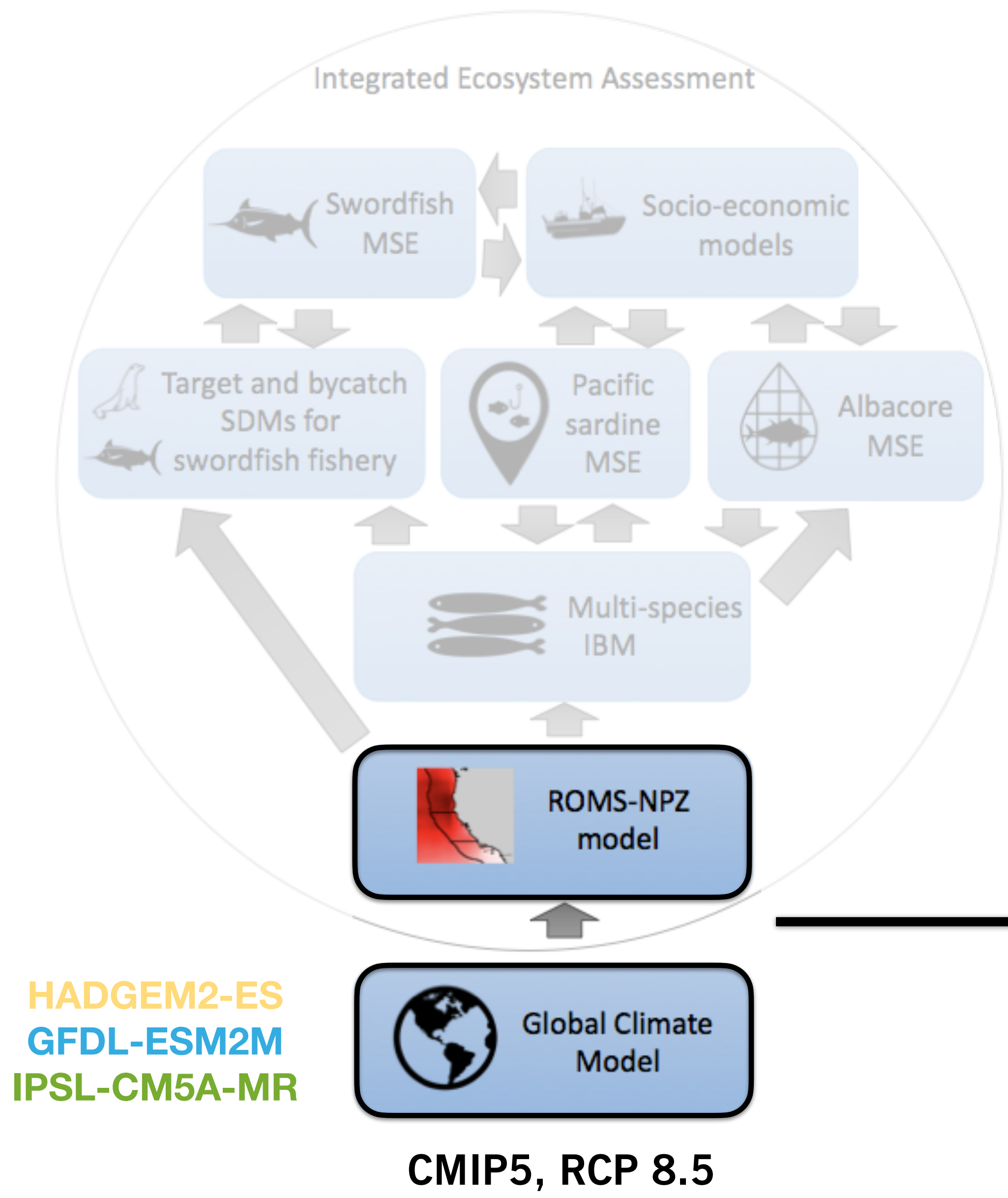


SST
change (°C)



PP change
($\times 10^{-9} \text{ mol m}^{-2} \text{ s}^{-1}$)





HADGEM2-ES
 GFDL-ESM2M
 IPSL-CM5A-MR

CMIP5, RCP 8.5

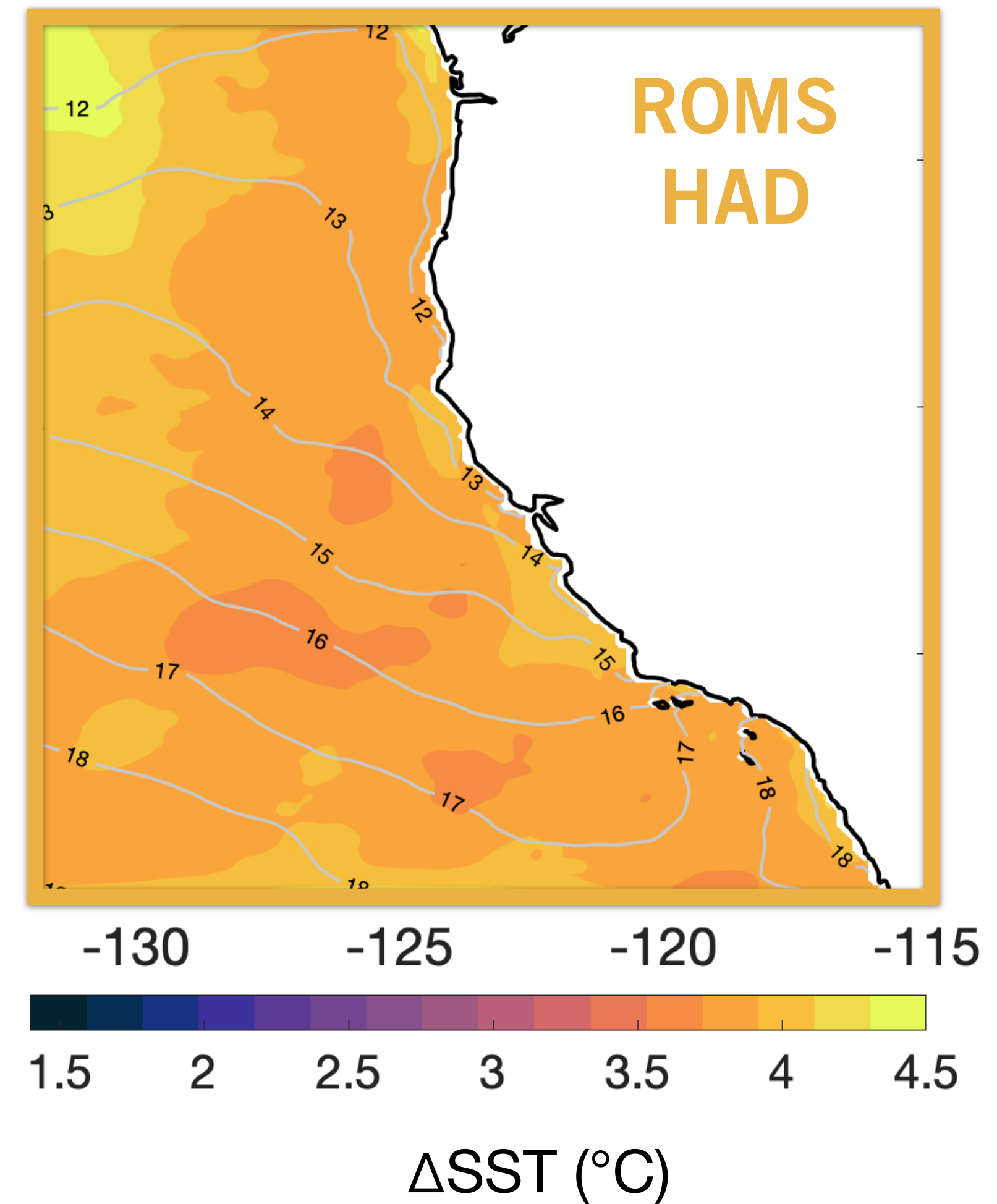
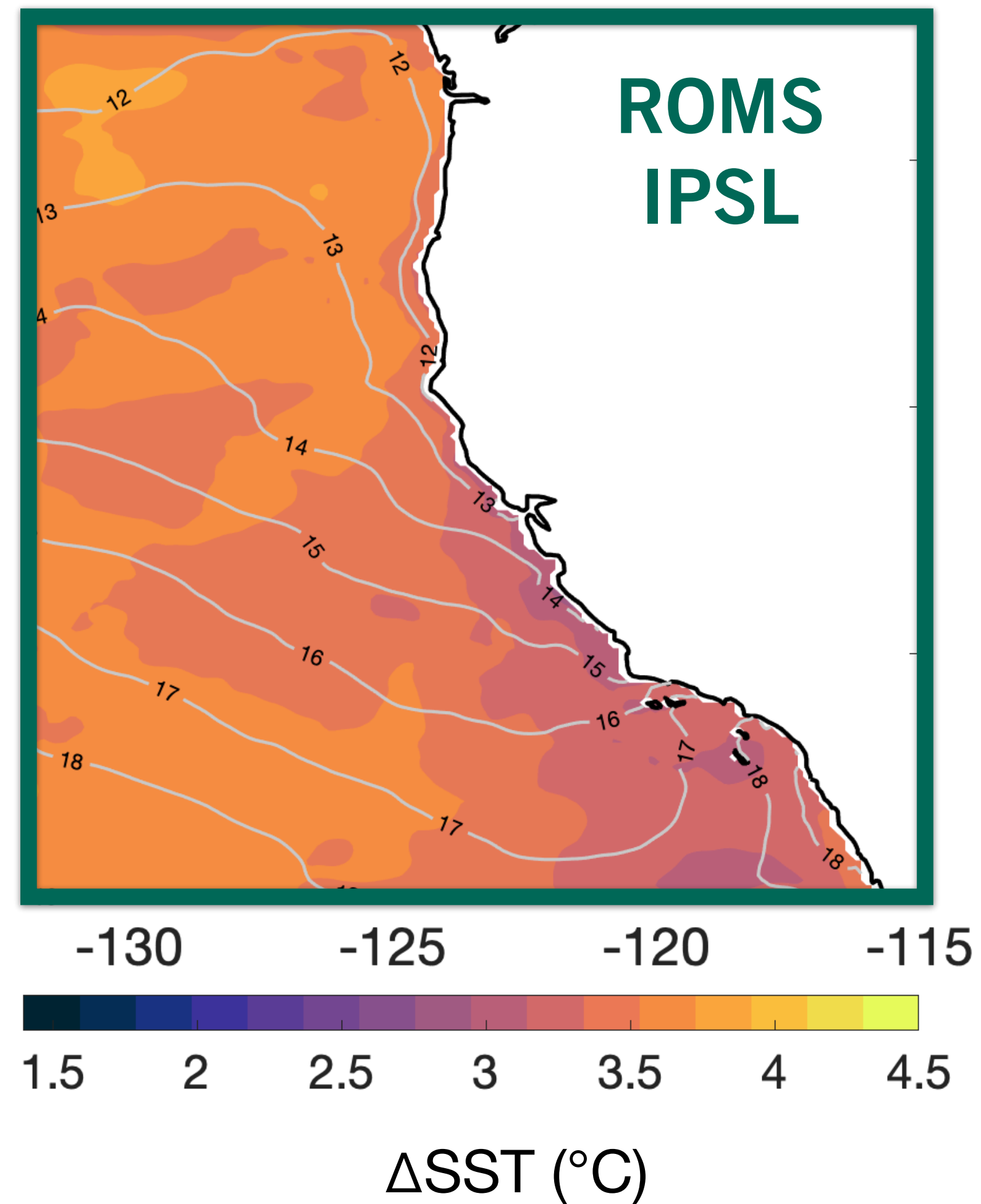
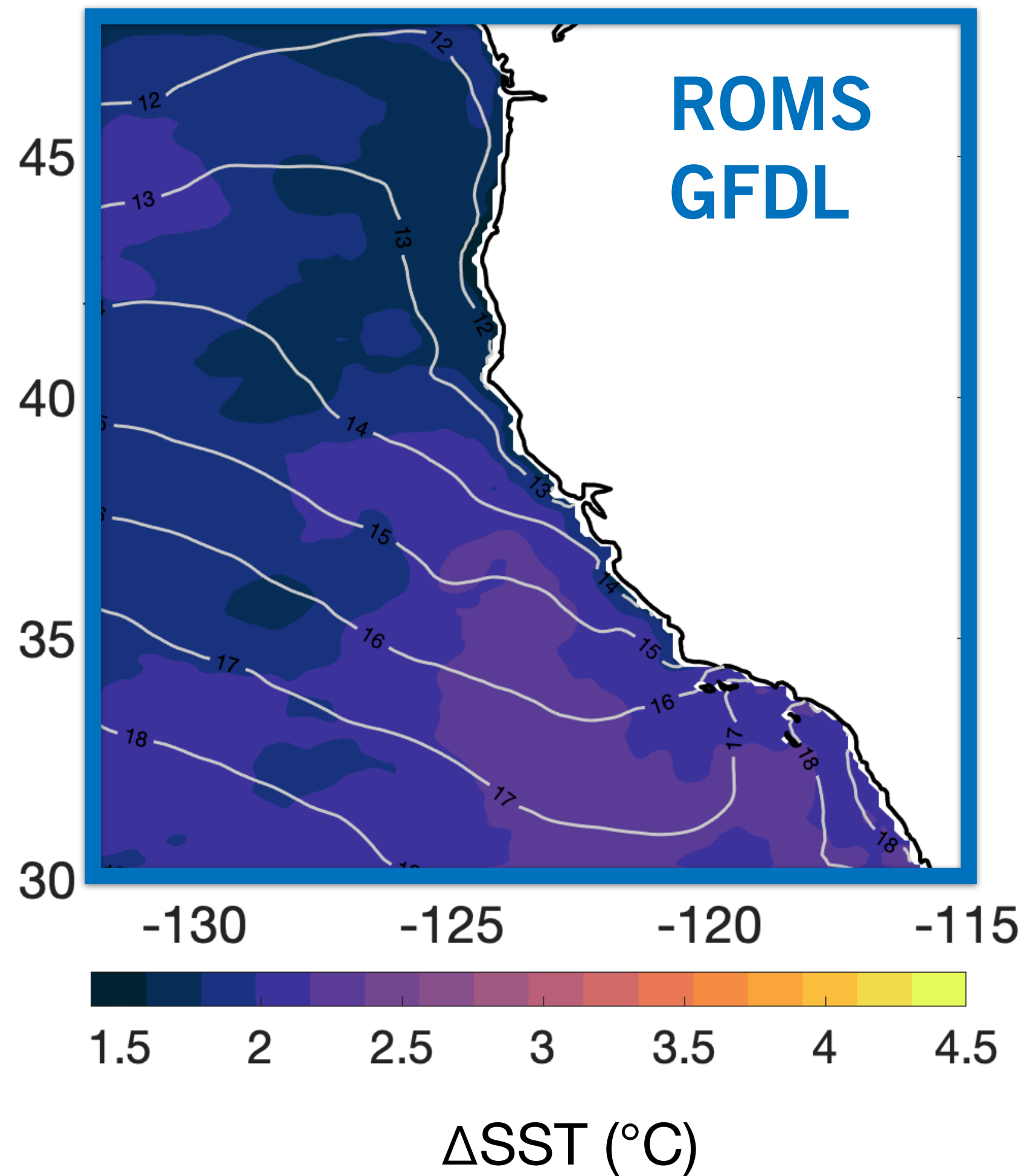
3 Downscaling Experiments:

ROMS GFDL **ROMS IPSL** **ROMS HAD**

Time-Varying Delta Downscaling method

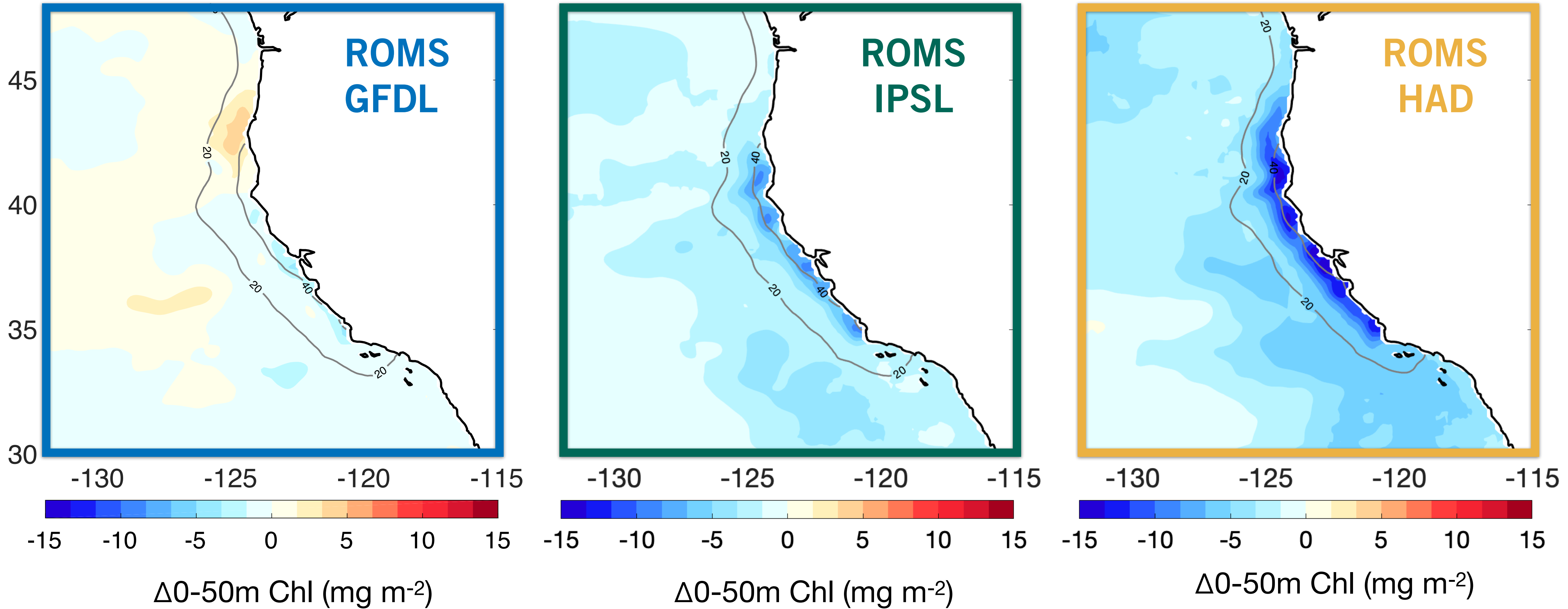
Future Changes: $SST_{\text{Future}} - SST_{\text{Historical}}$

Future 2070-2100
Historical 1980-2010

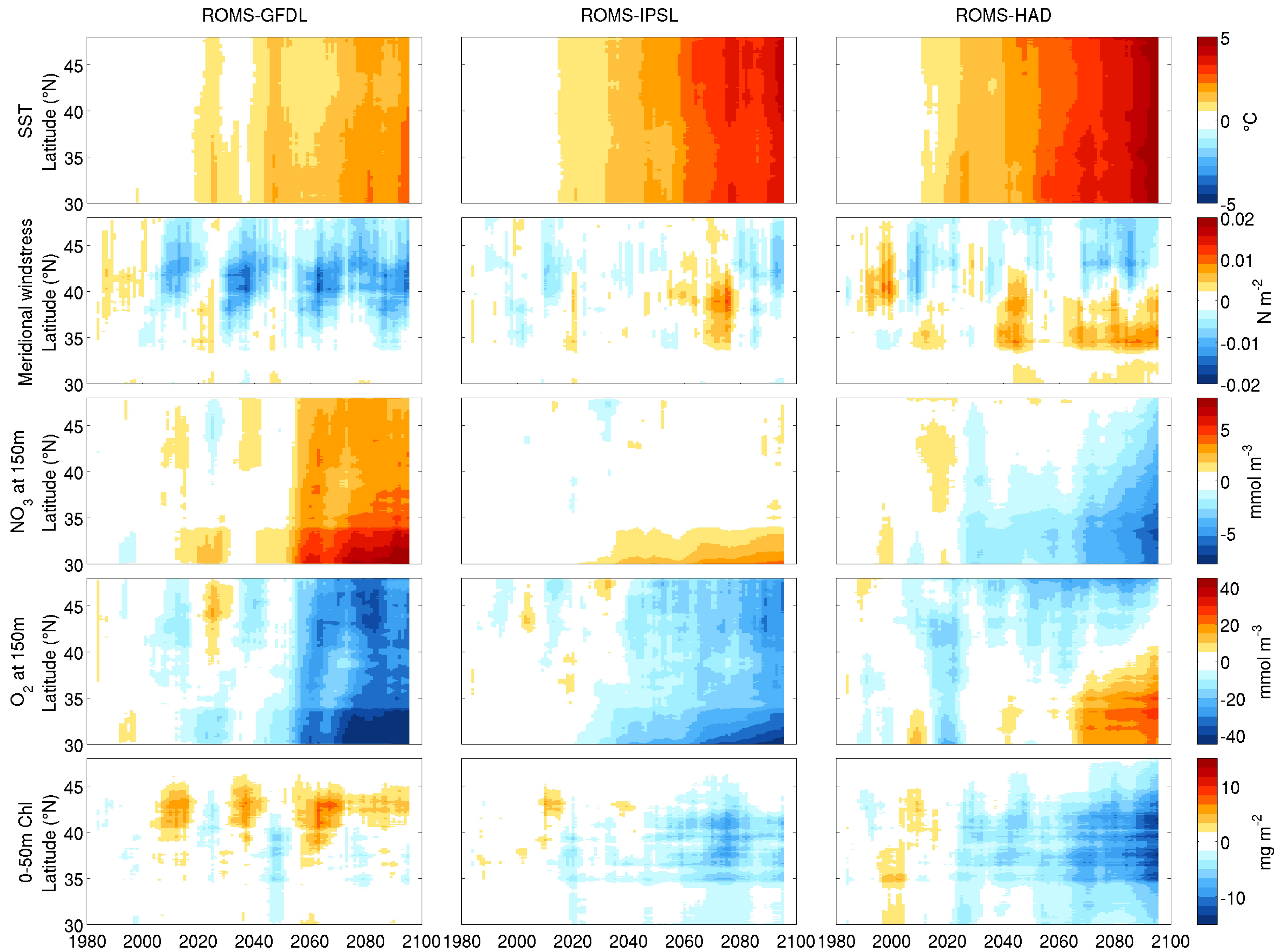
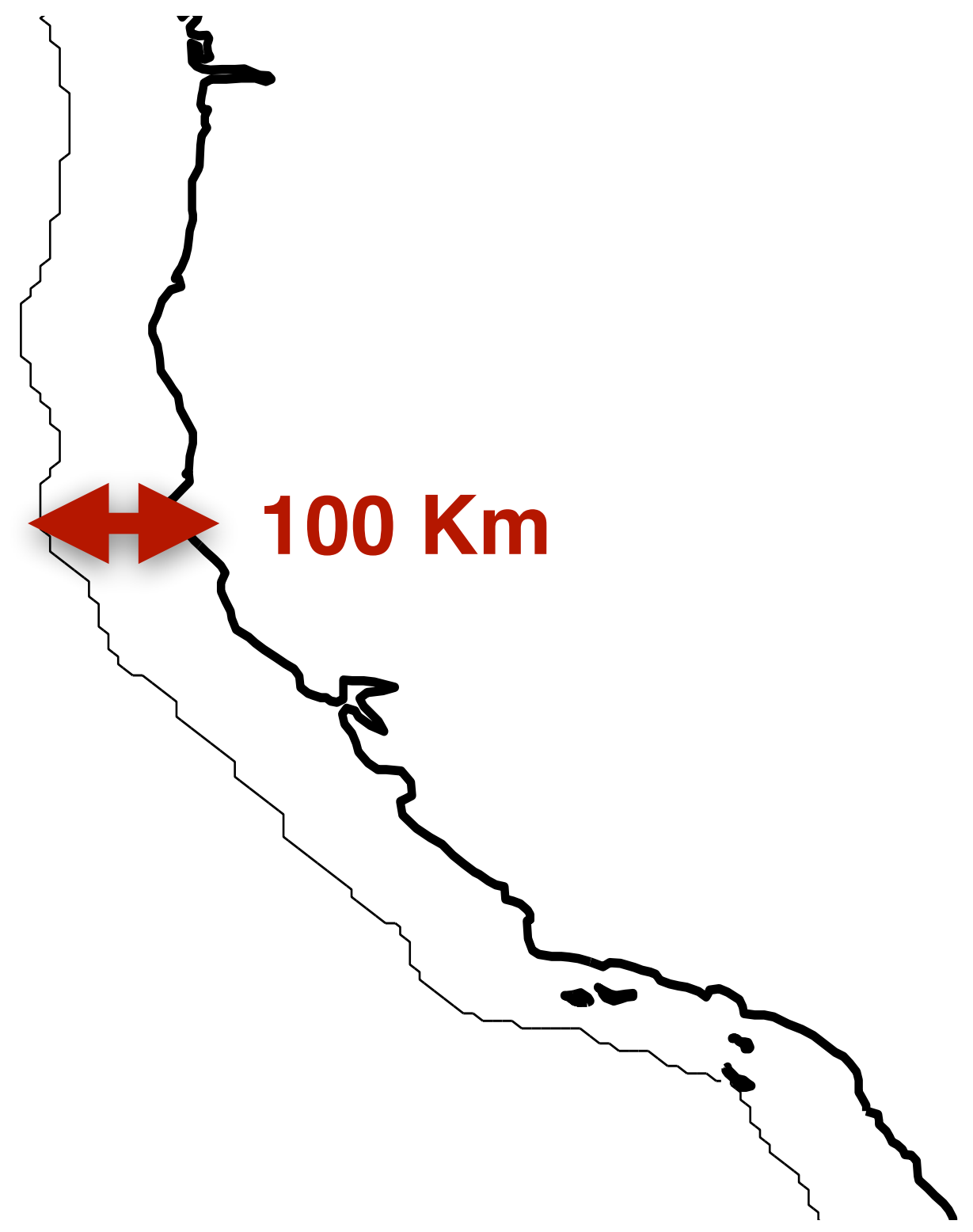


Future Changes: $CHL_{Future} - CHL_{Historical}$

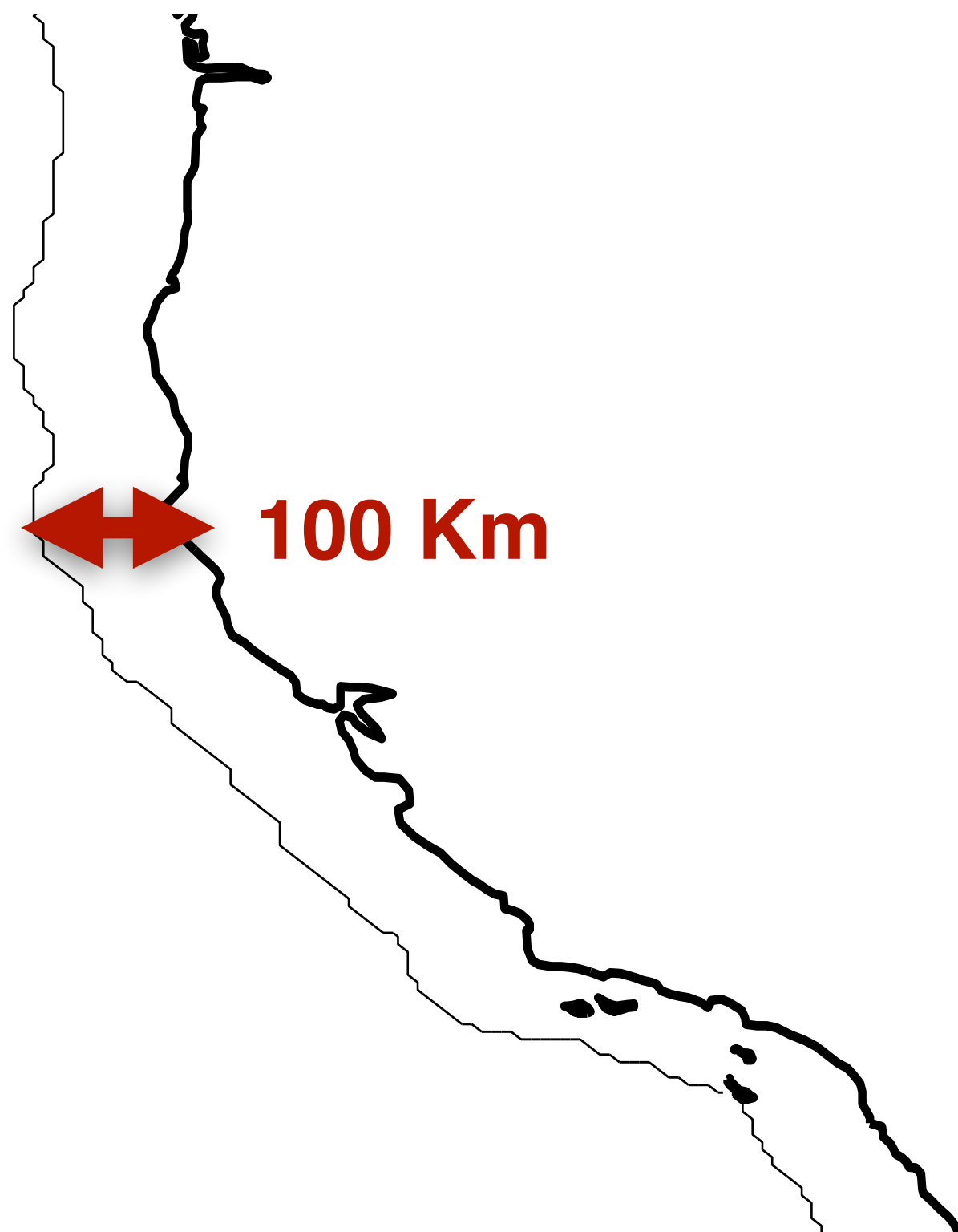
Future 2070-2100
Historical 1980-2010



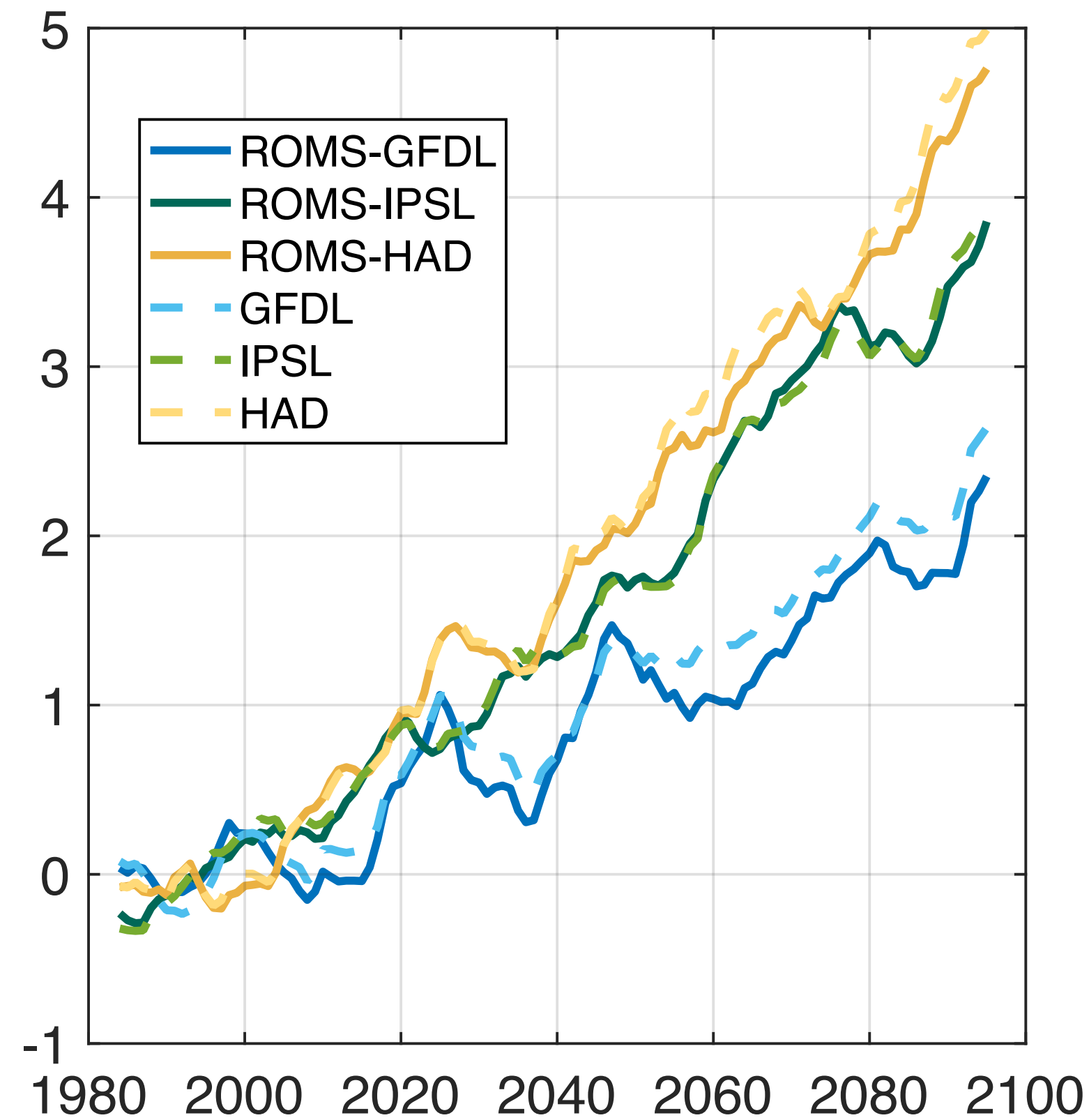
Temporal variability



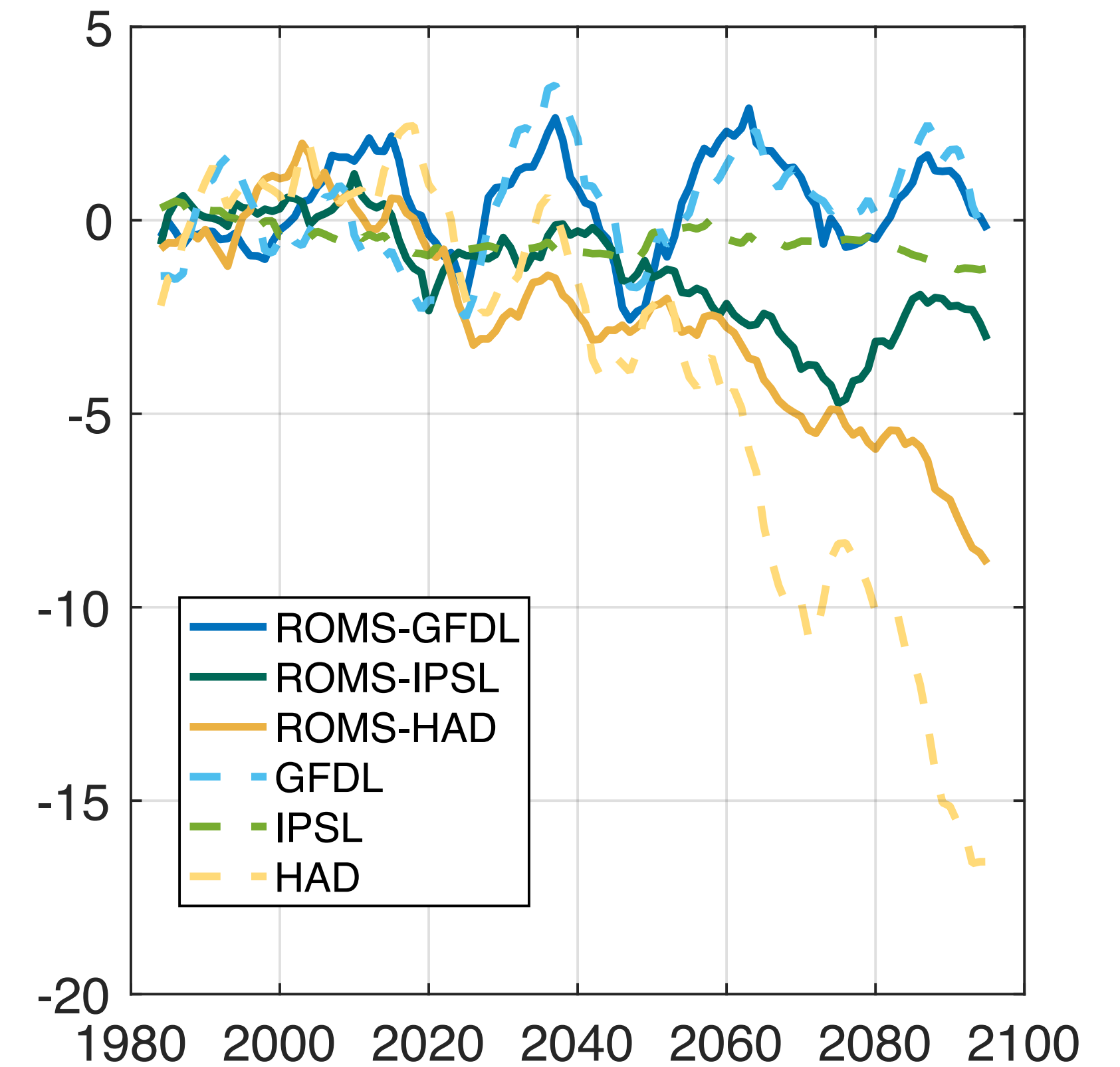
Impact of Regional Downscaling



SST change (°C)

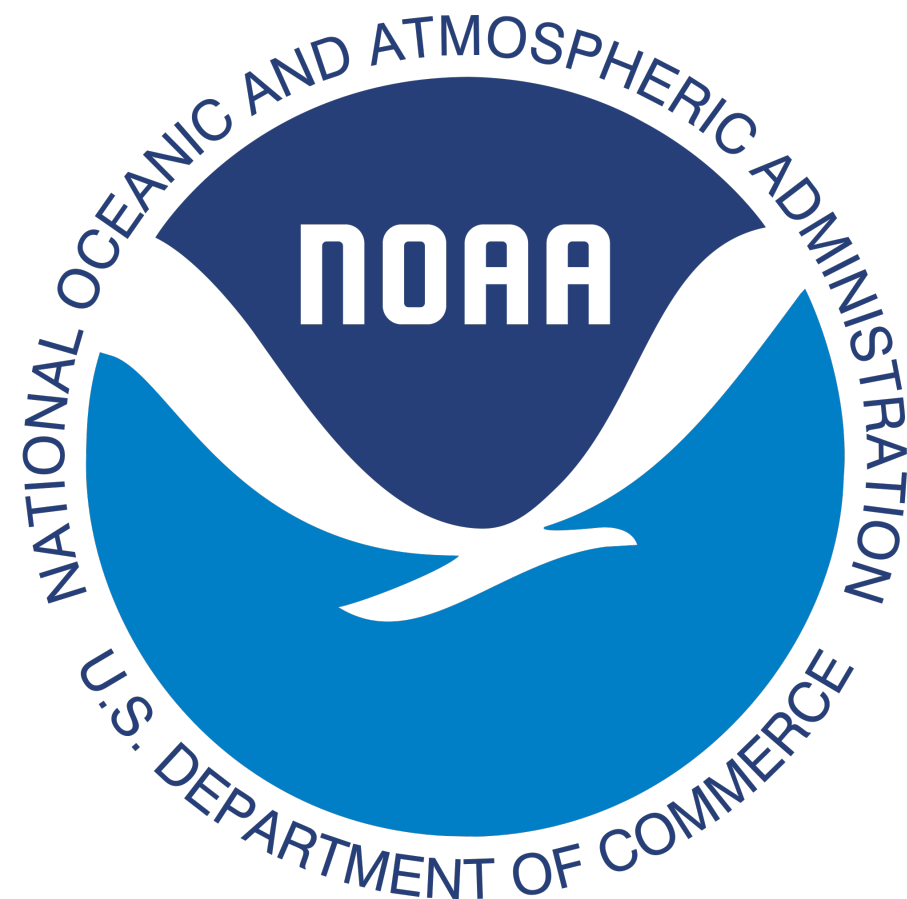


O-50m Chl anomalies (mg m⁻²)



SUMMARY

- Better resolution of upwelling dynamics leads to **regional differences** in the future changes
- All models agree in the direction of the future change in offshore waters
- Large **inter-model differences** arise in the coastal region, specially for biogeochemical variables
- While trends in the downscaled models reflect those in the GCMs that force them, the GCM and downscaled solutions differ more for biogeochemical than for physical variables



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Pozo Buil et al., in review (Frontiers Marine Sciences)