

Fig. 6 Monsoon onset pentad **a** GPCP, **b** gfdl cm2.0, **c** inm-cm 3.0, **d** CMIP5 MMM, and **e** CMIP3 MMM. Monsoon peak pentad **f** GPCP, **g** MIROC5, **h** echo-g, **i** CMIP5 MMM, and **j** CMIP3 MMM. Also given in **a** and **f** is the pattern correlation of GPCP with CMAP, and in **b-e** and **g-j** are the model pattern correlations with GPCP over the region 50°E-180°E, 0°-50°N. The units are pentad (Pentad 1 = January 1-5). Note the difference in scale for the onset vs. peak phases. GPCP and CMAP data are from 1979-2007 and the model data is from 1961-1999

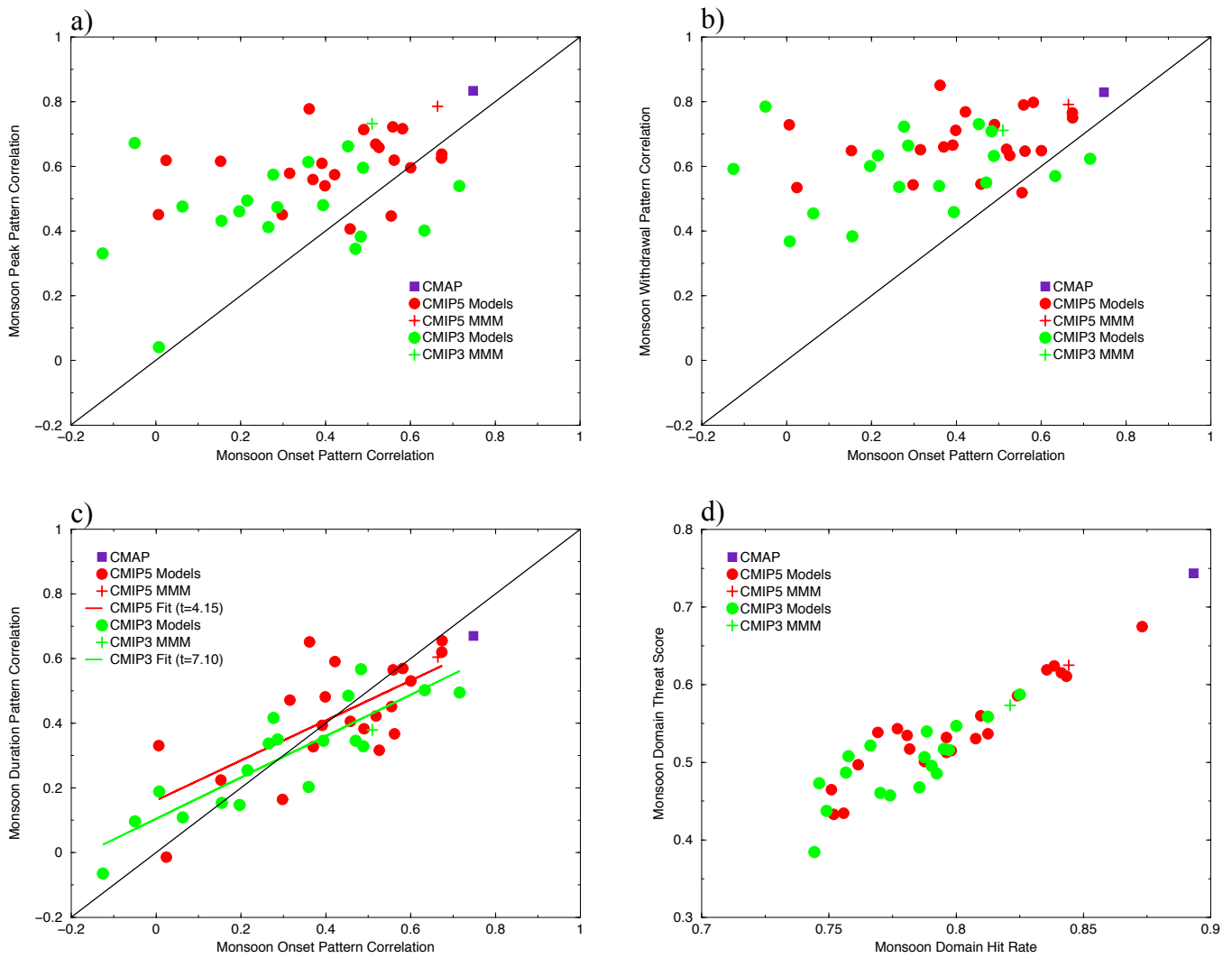
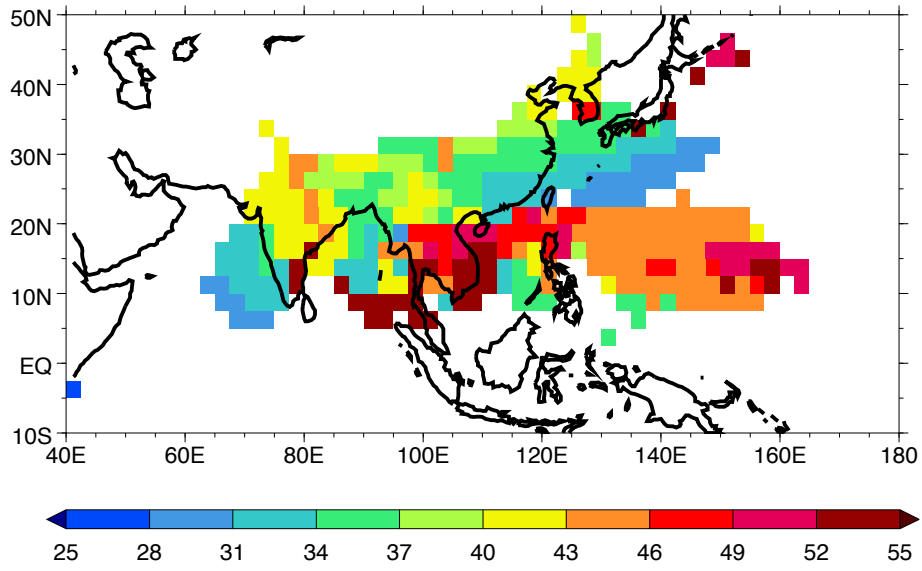
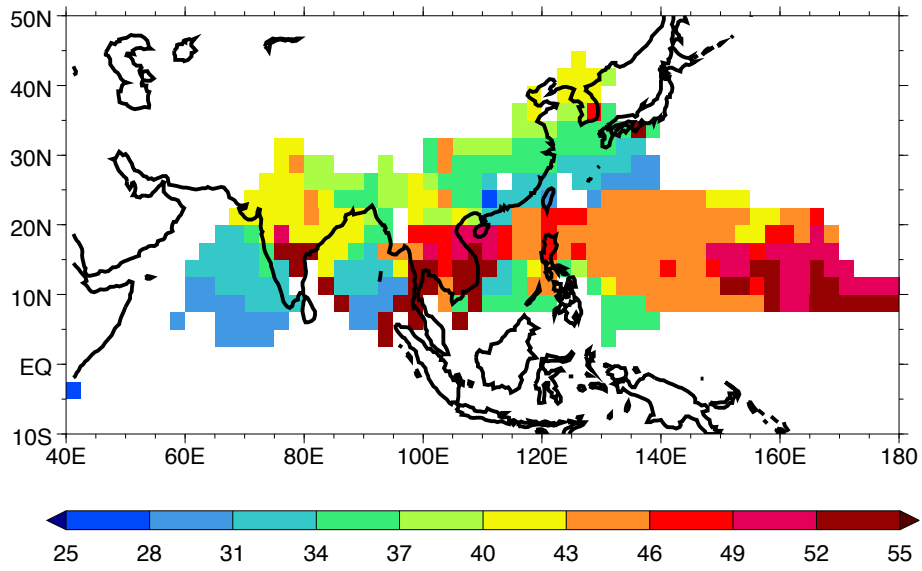


Fig. 8 Scatterplot of the pattern correlation with observations of the simulated pentad of monsoon onset vs. **a** the pattern correlation with observations of the simulated pentad of monsoon peak, **b** the pattern correlation with observations of the simulated pentad of monsoon withdrawal, and **c** the pattern correlation with observations of the simulated number of pentads of monsoon duration. **d** Scatterplot of the Monsoon Domain Hit Rate vs. the Monsoon Domain Threat Score. In **a-d** the skill is with respect to GPCP for the region 50°E-180°E, 0°-50°N

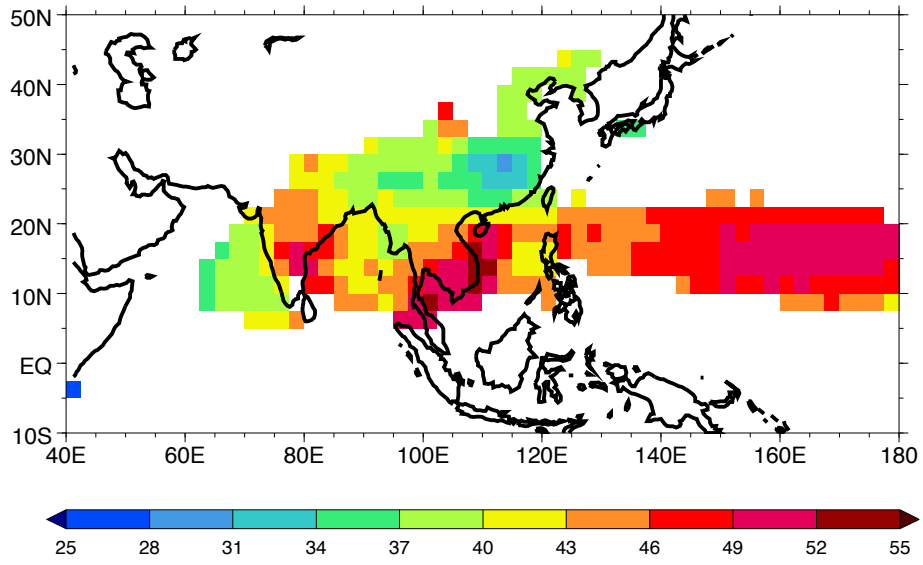
GPCP (1979-2007)



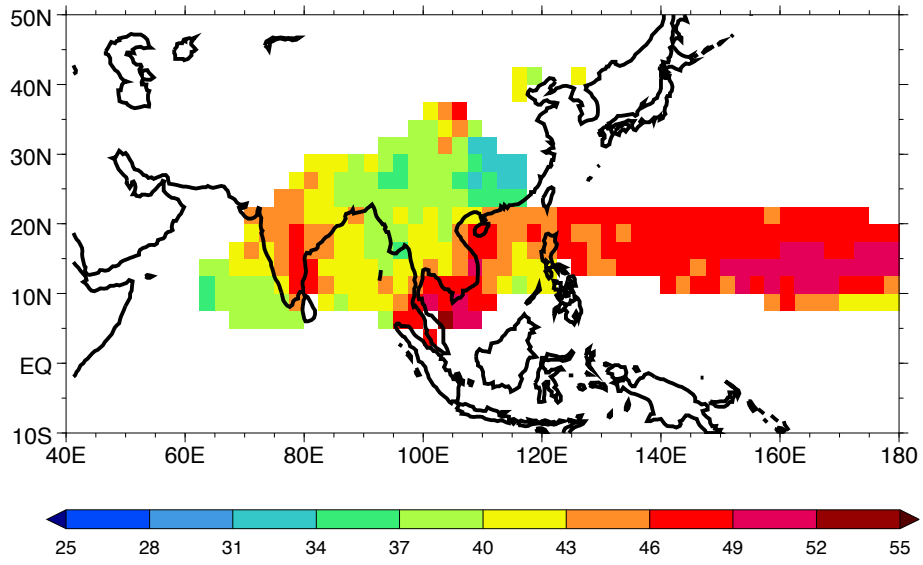
CMAP (1979-2007)



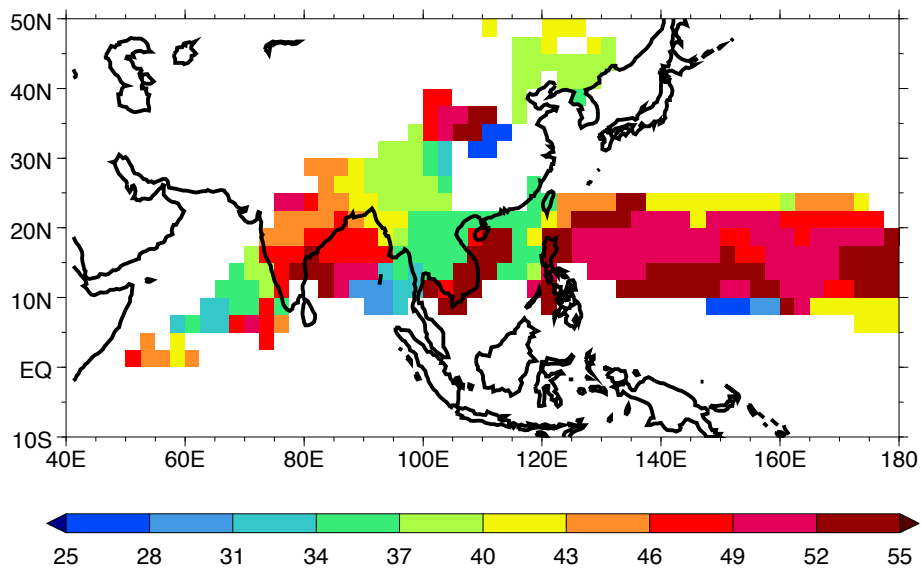
CMIP5 MMM



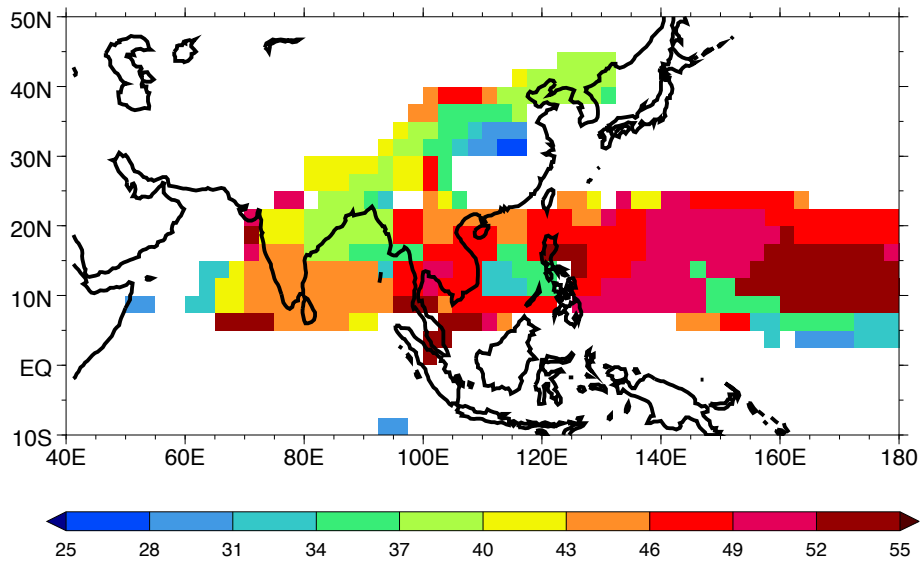
CMIP3 MMM



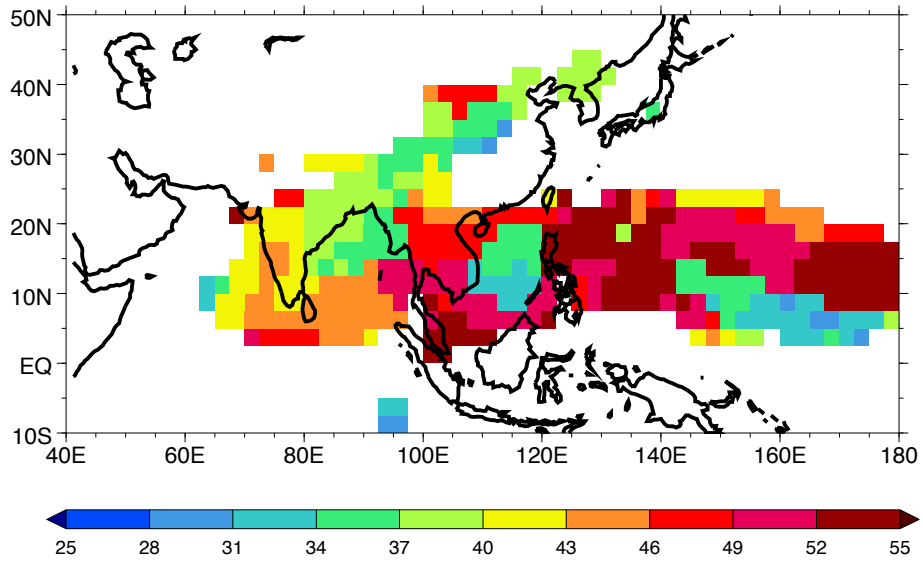
CanESM2



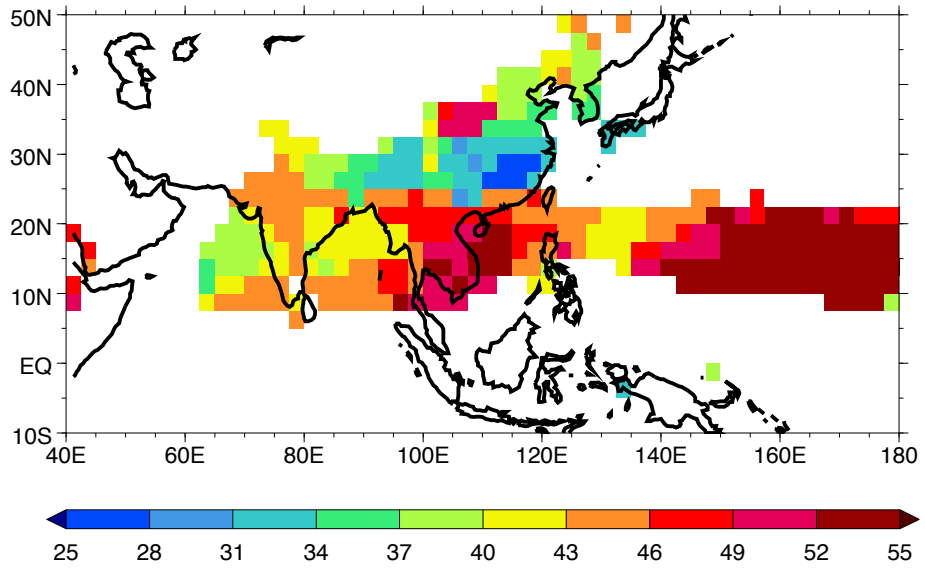
cgcm3.1 (t47)



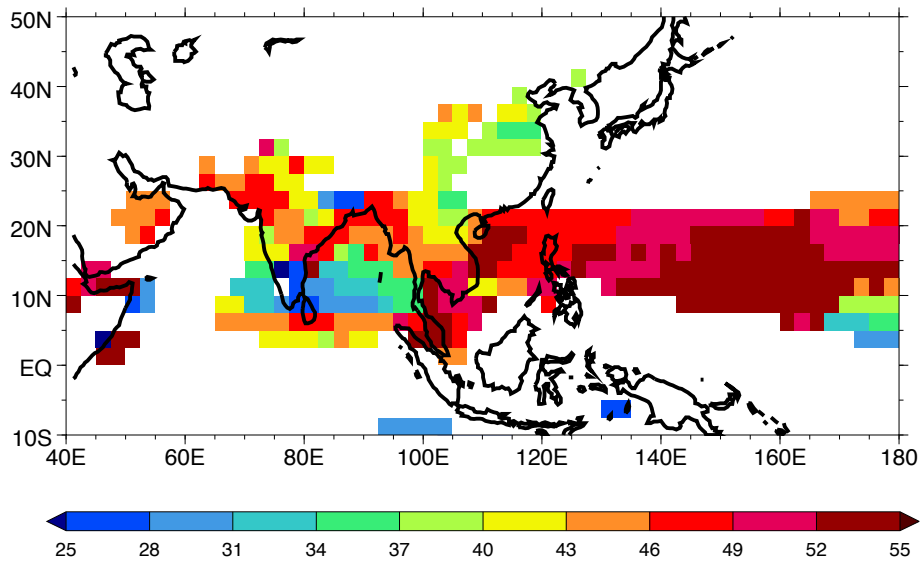
cgcm3.1 (t63)



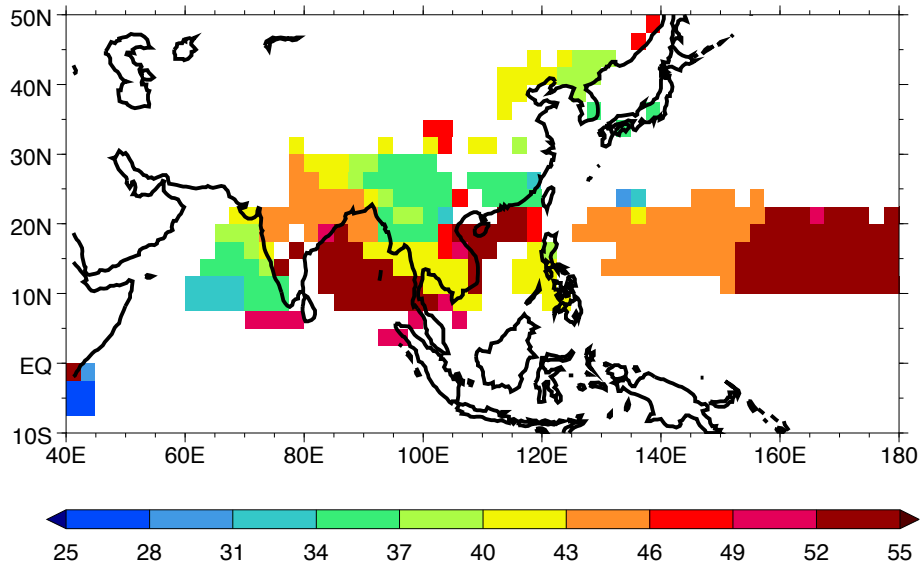
CCSM4



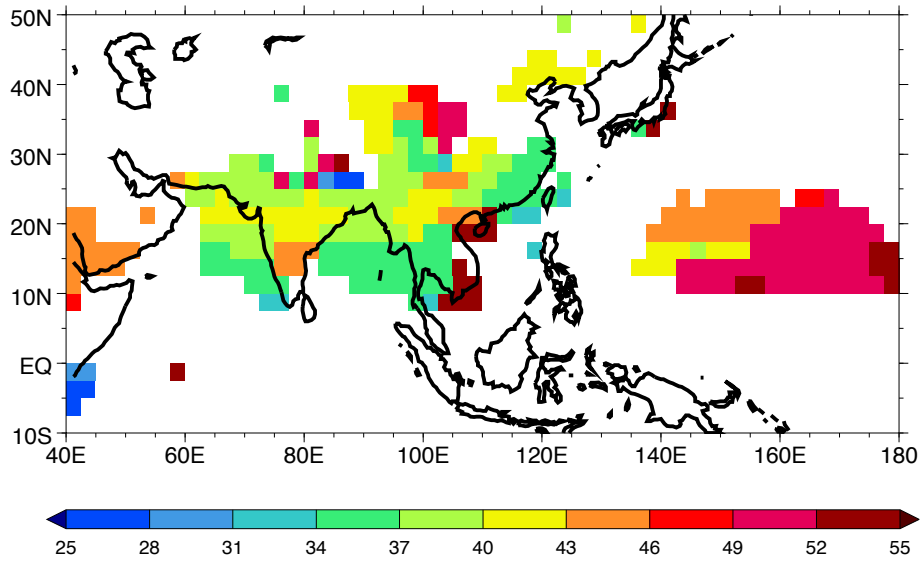
ccsm3



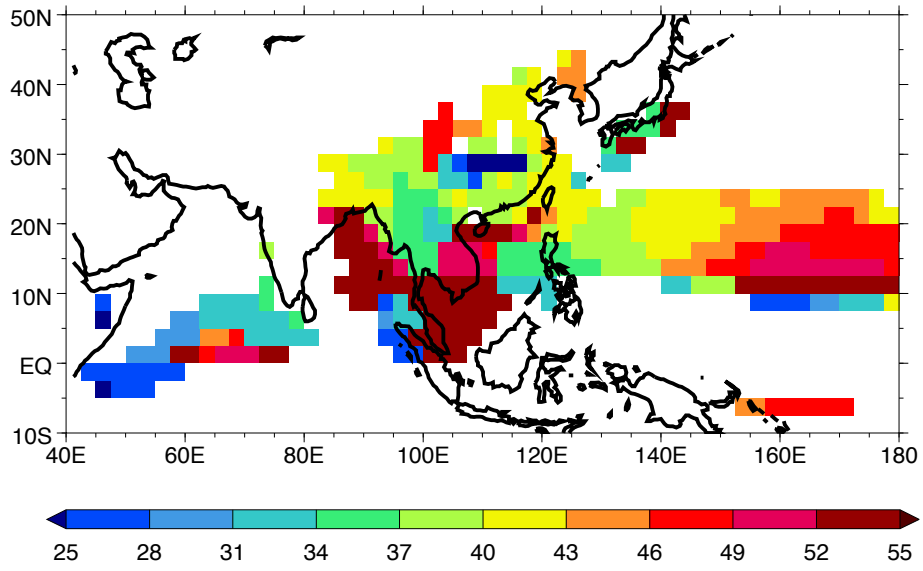
CNRM-CM5



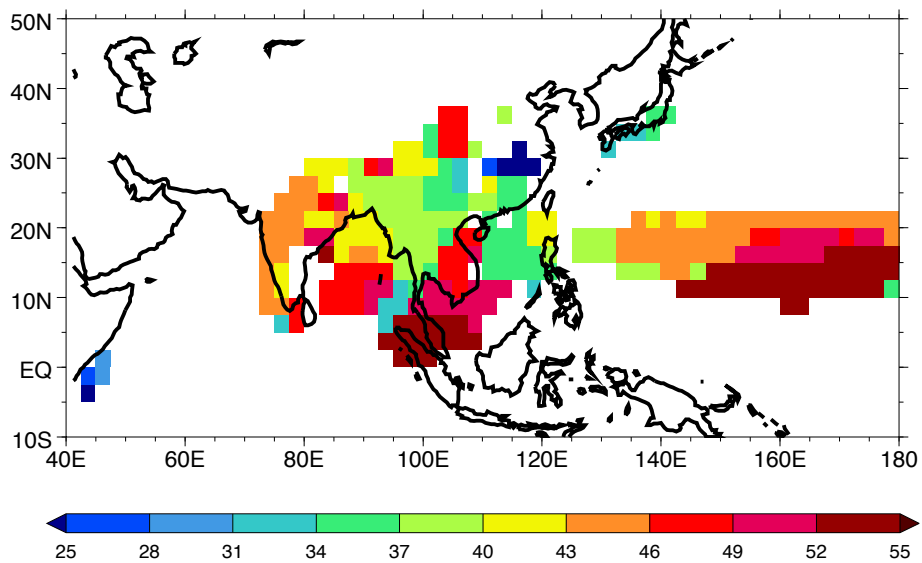
cnrm-cm3



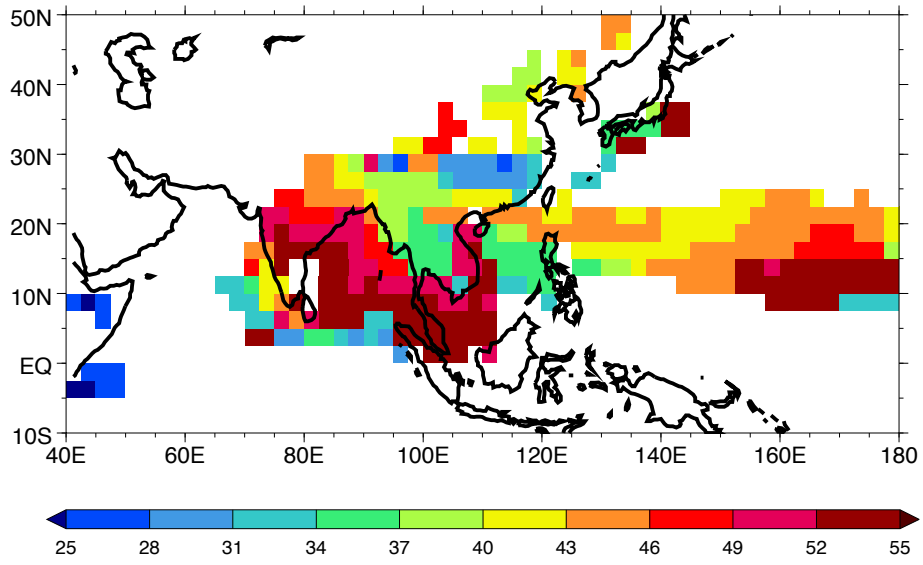
CSIRO-Mk3.6.0



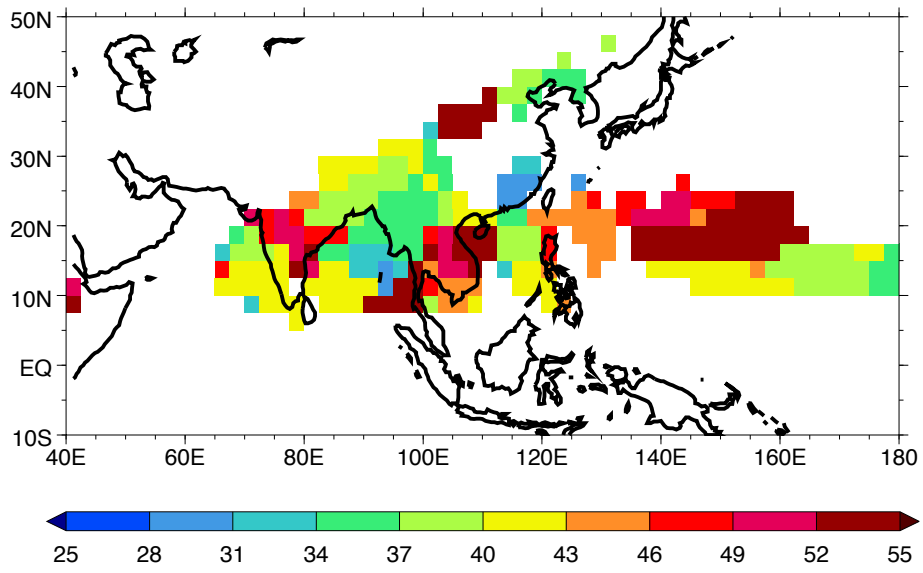
csiro-mk3.0



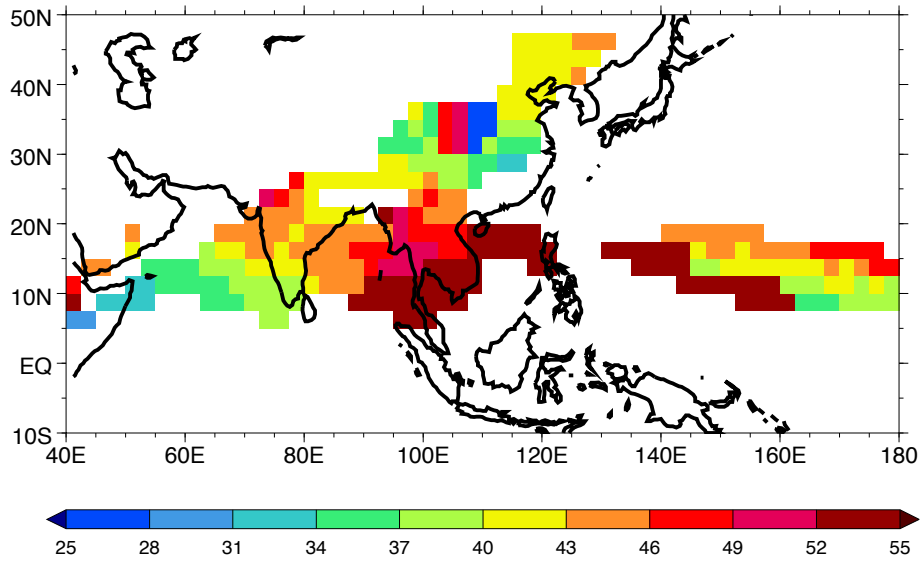
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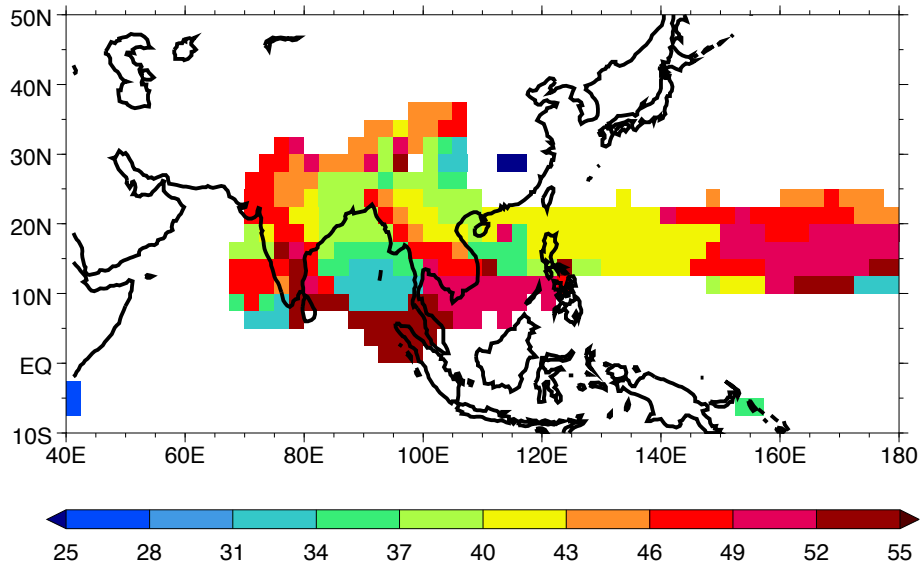
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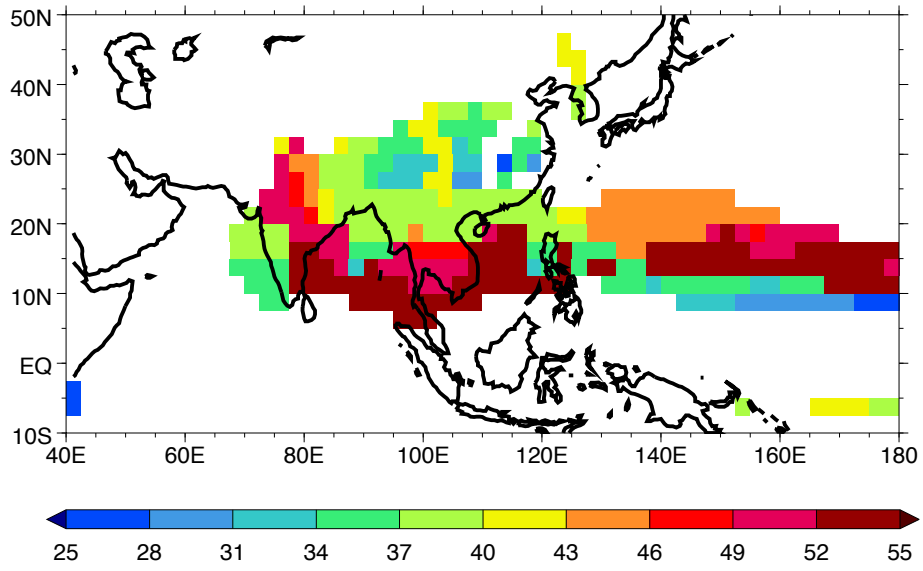
fgoals-g1.0



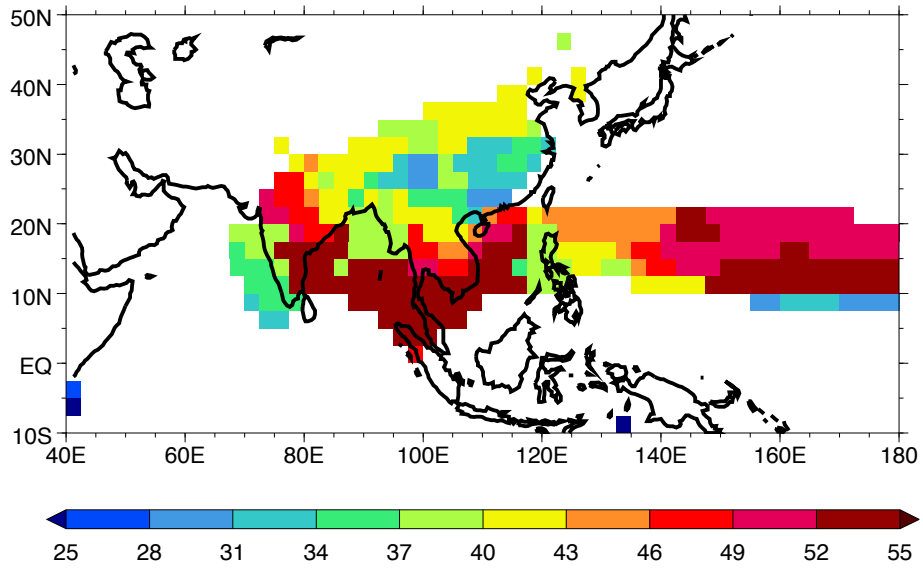
GFDL-CM3



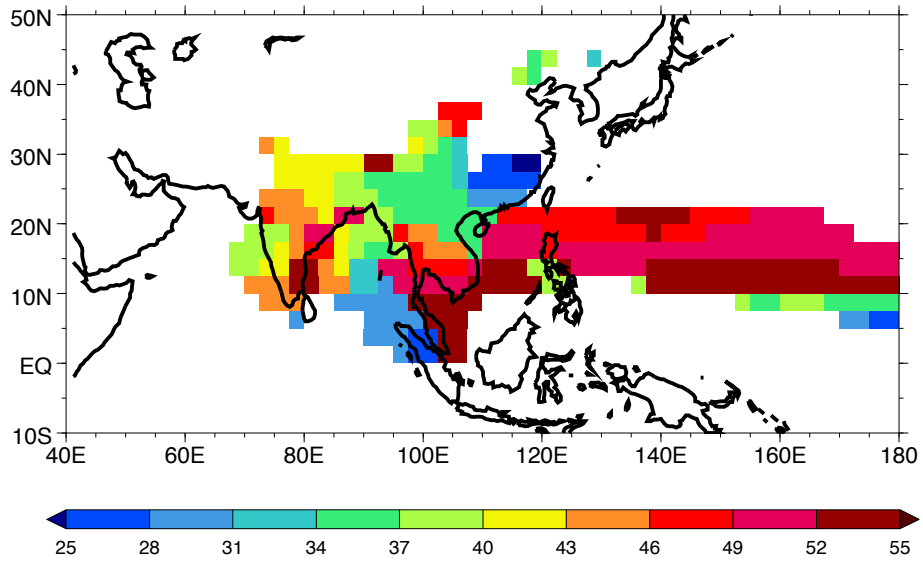
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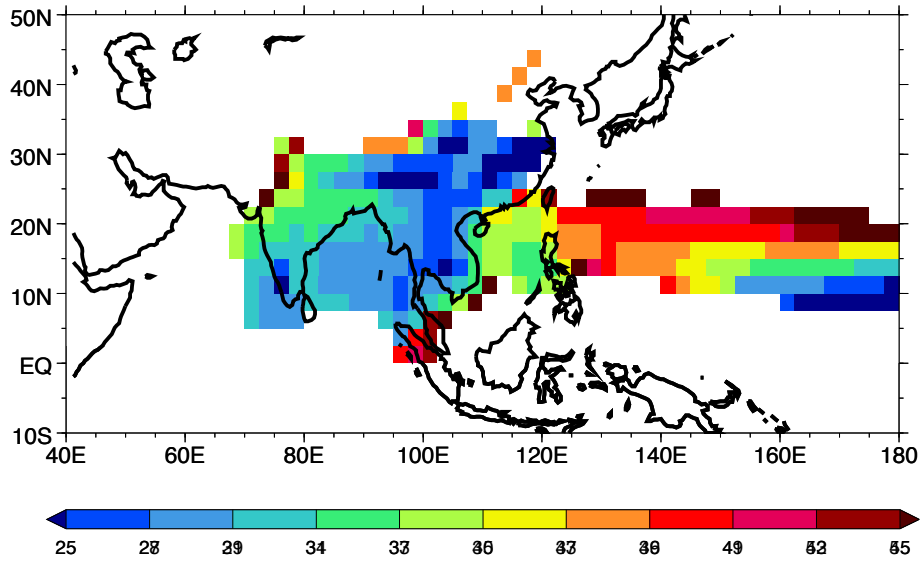
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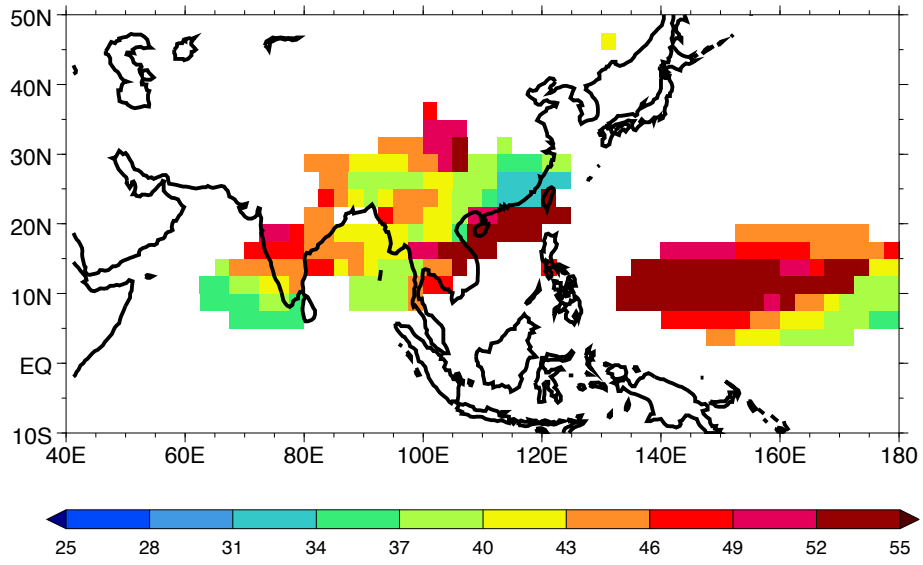
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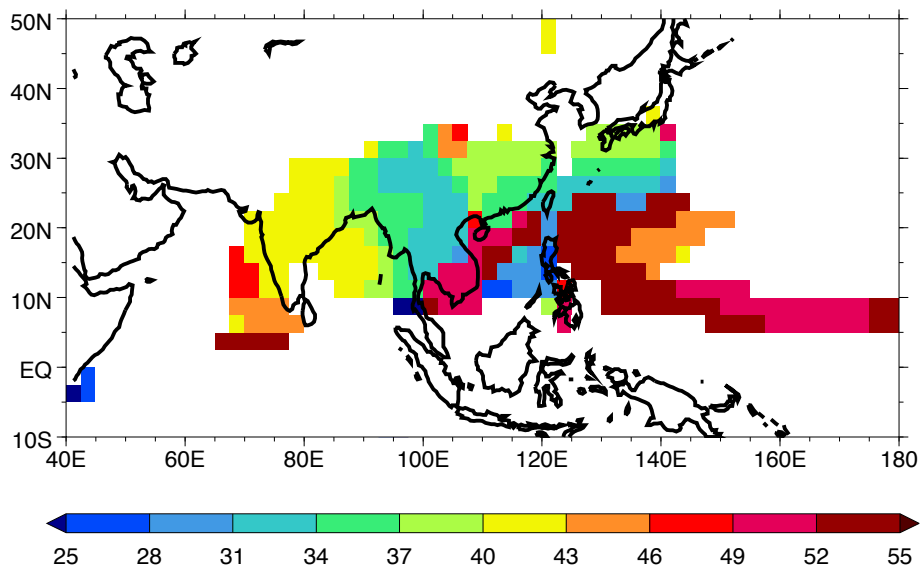
gfdl-cm2.1



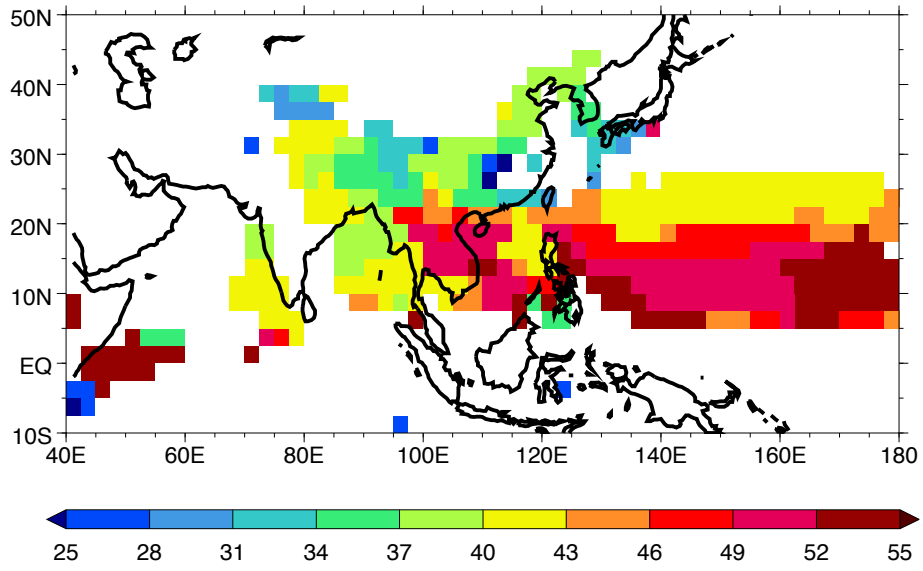
giss-aom



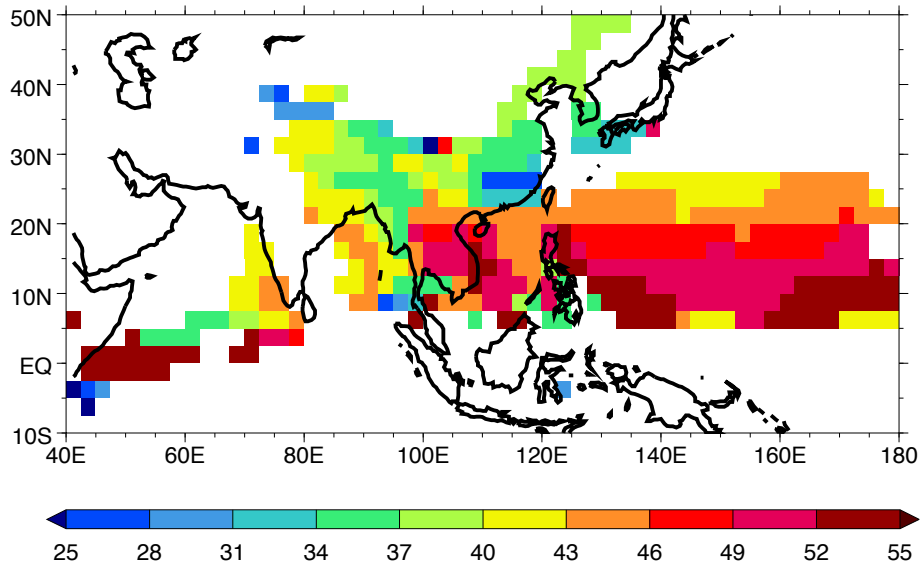
HadCM3



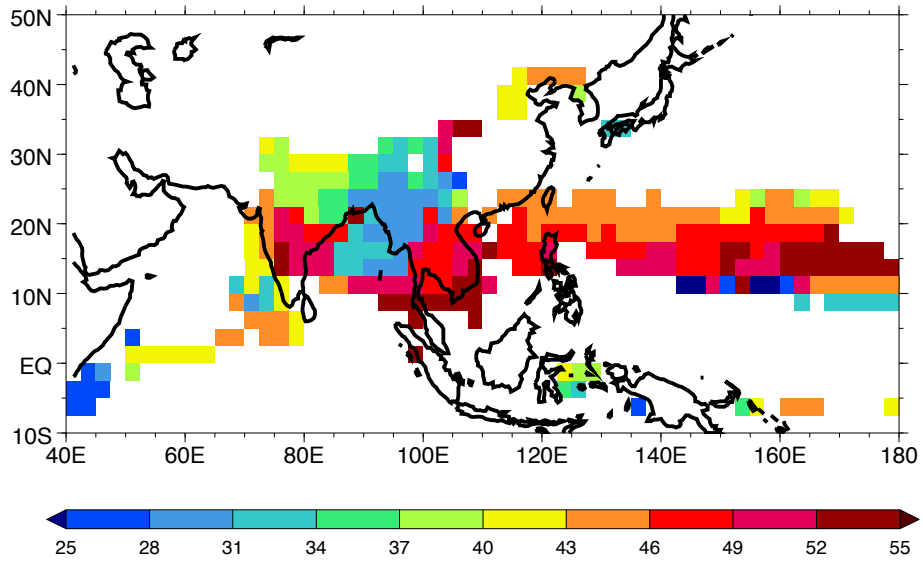
HadGEM2-CC



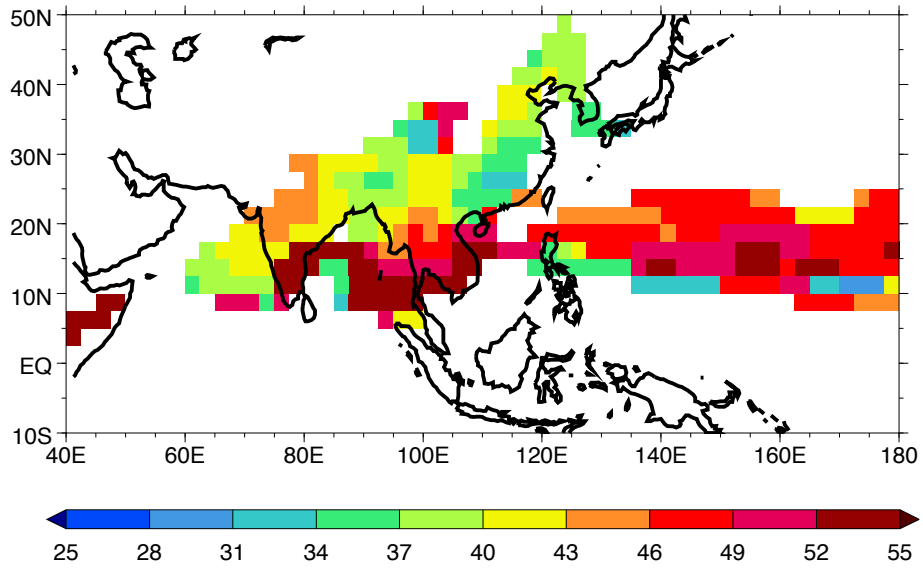
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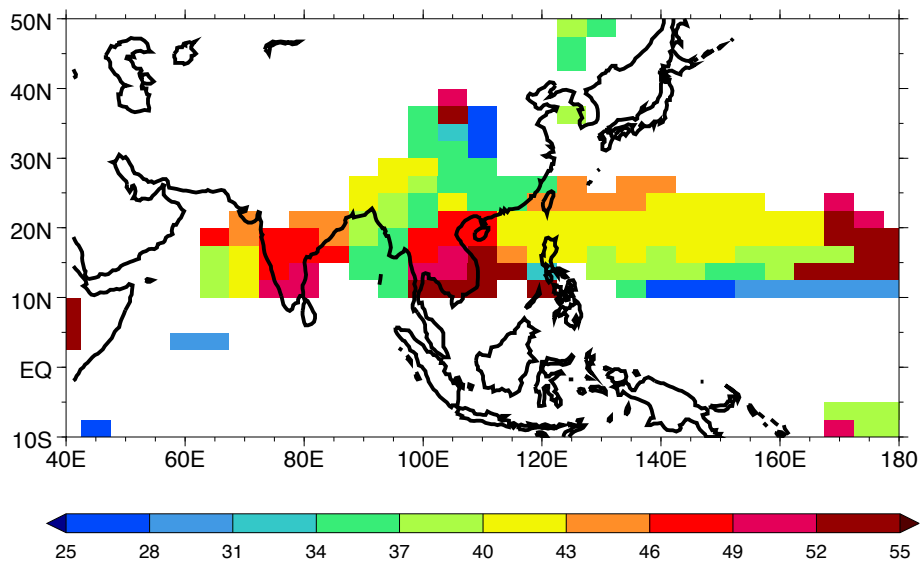
ingv-sxg



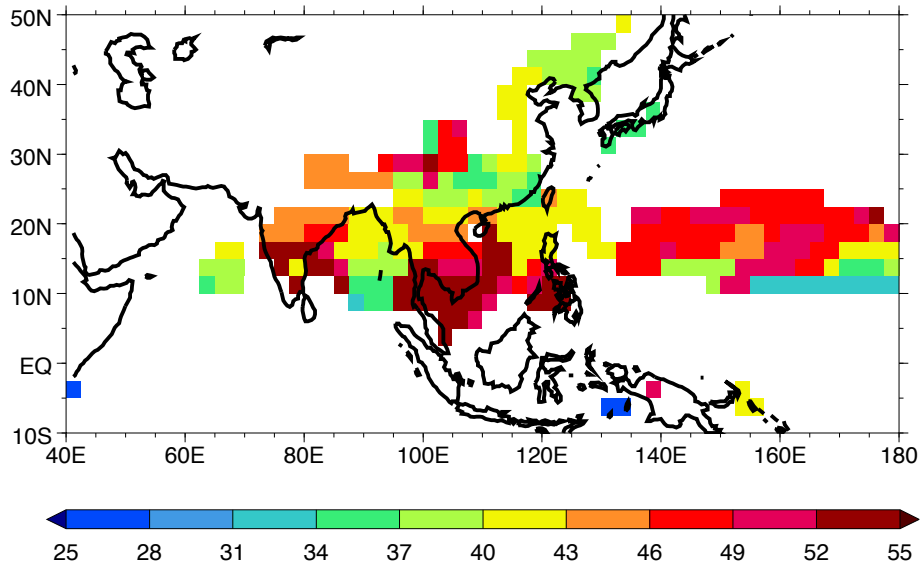
INM-CM4



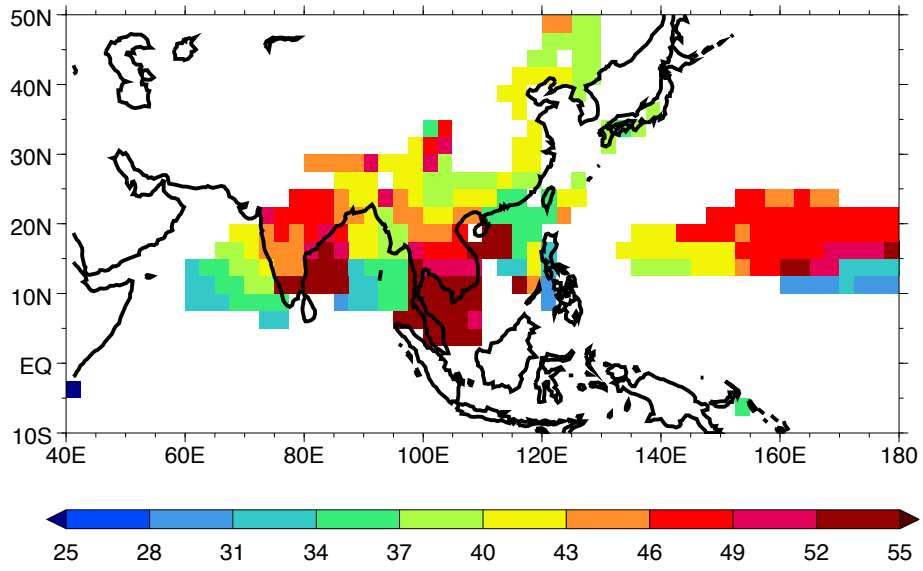
inm-cm3.0



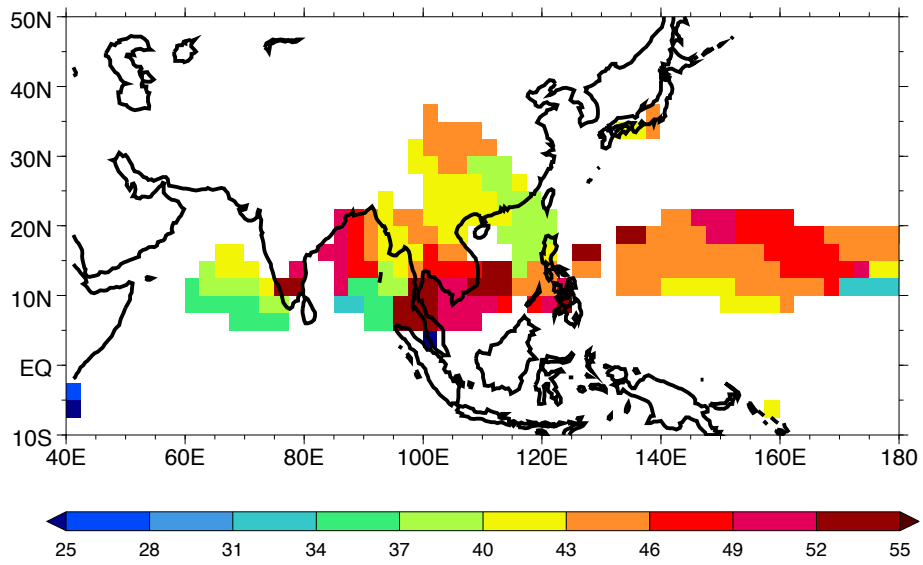
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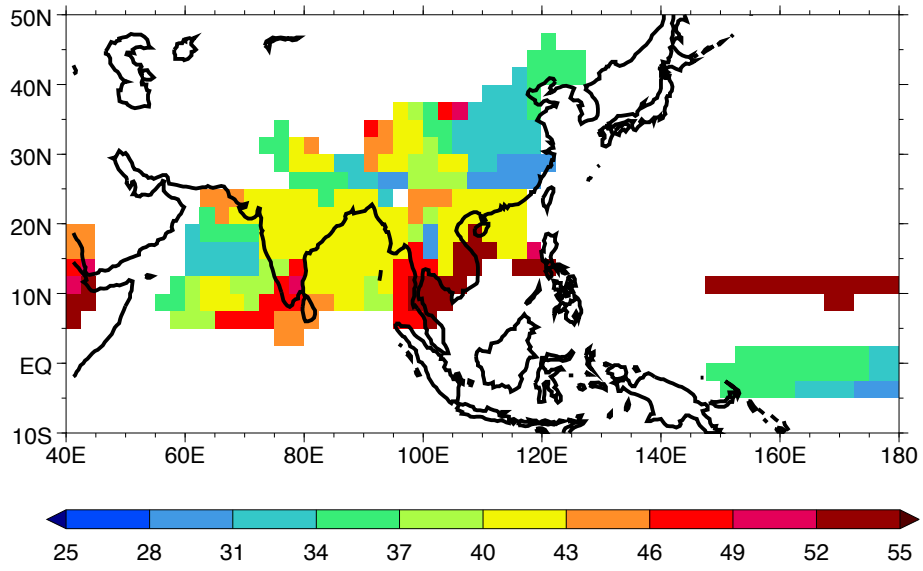
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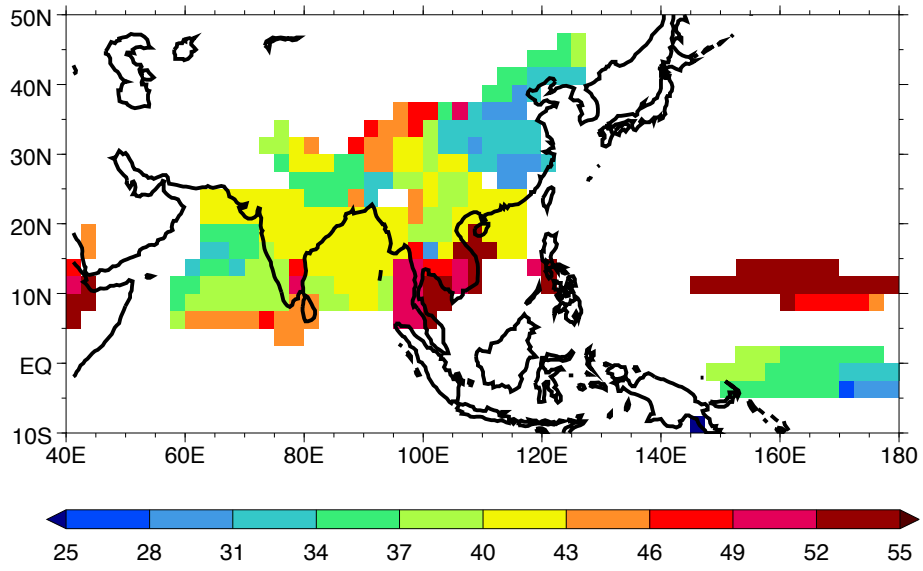
ipsl-cm4



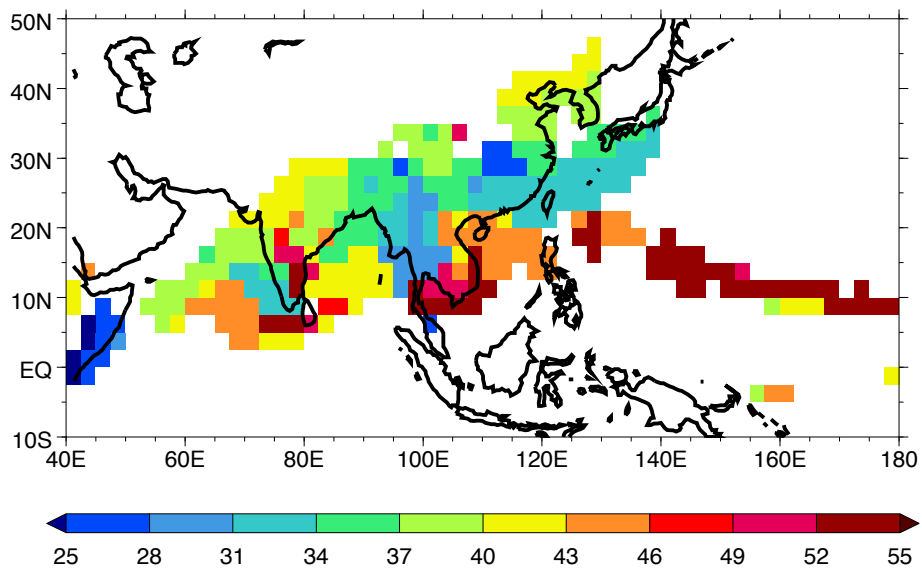
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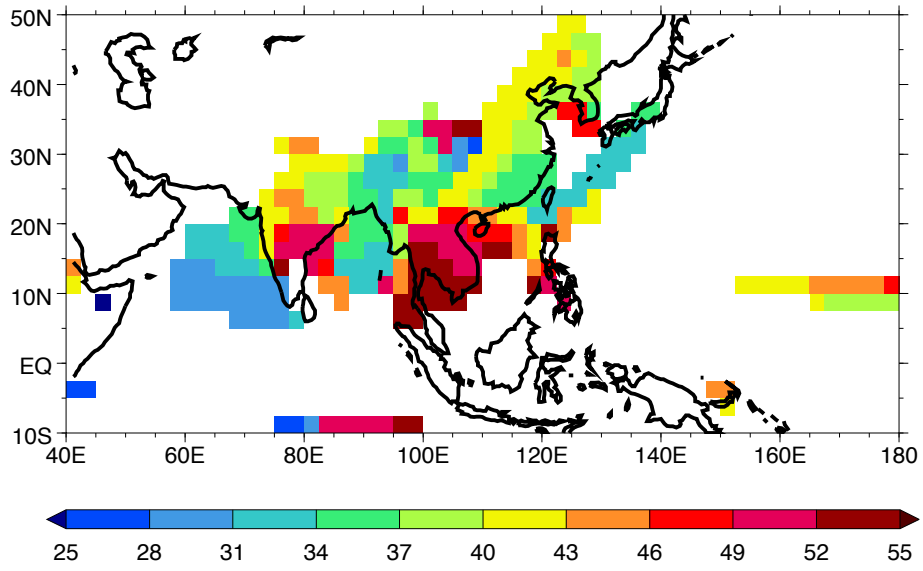
MIROC-ESM-CHEM



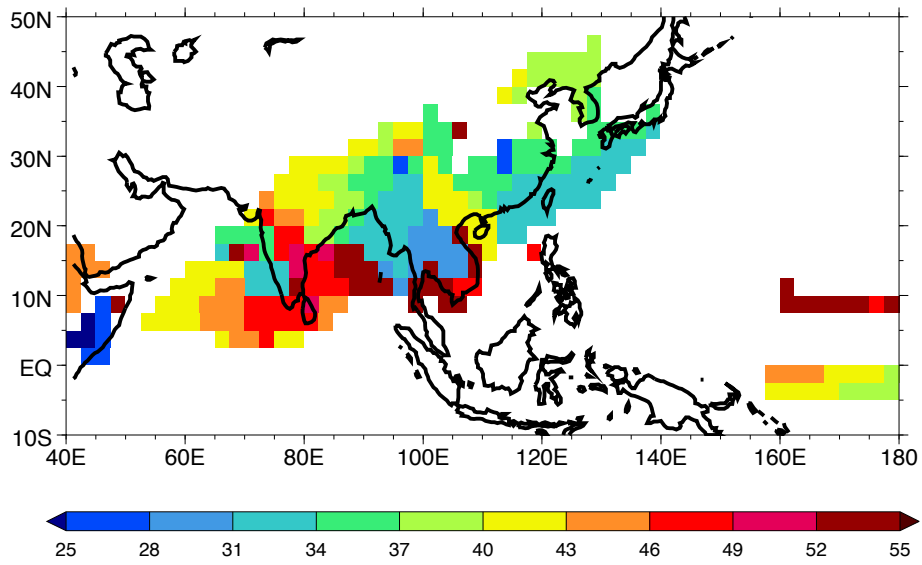
MIROC4h



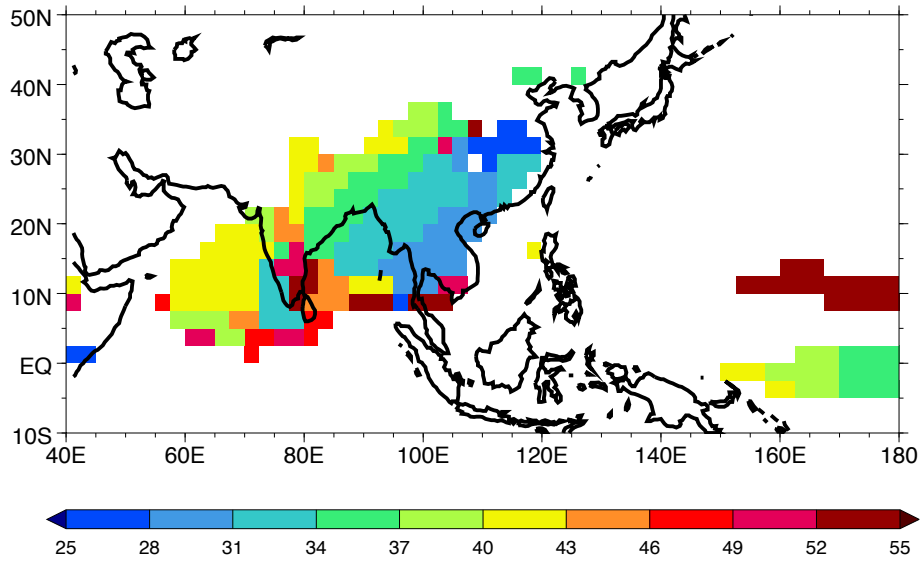
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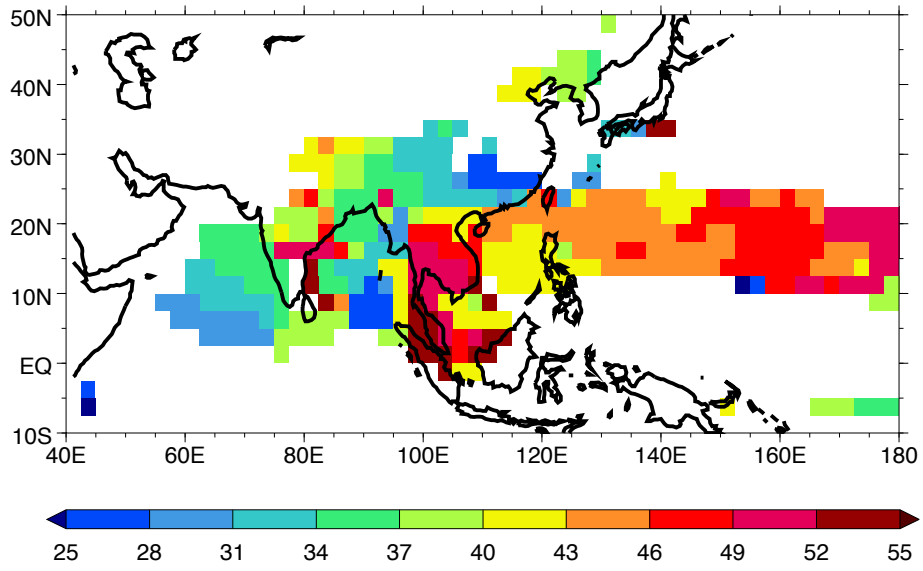
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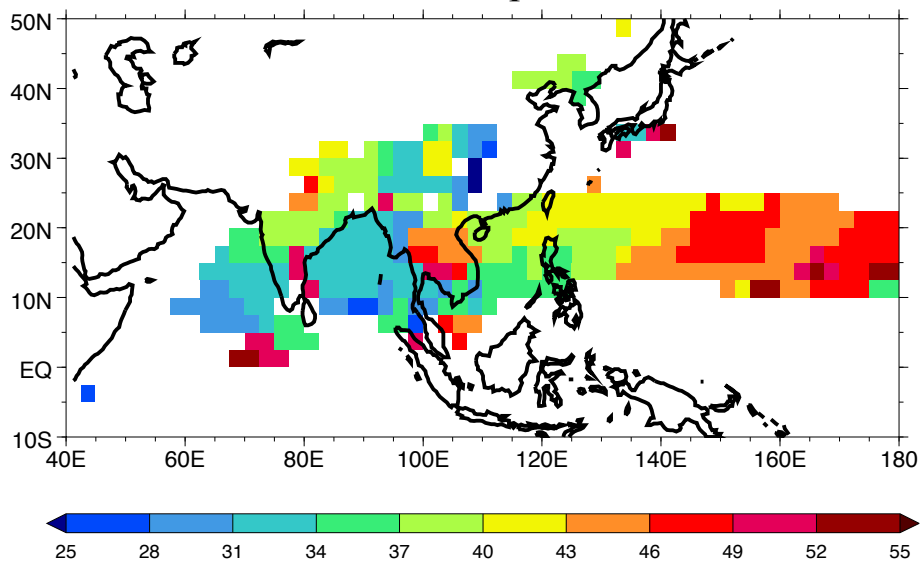
miroc3.2 (medres)



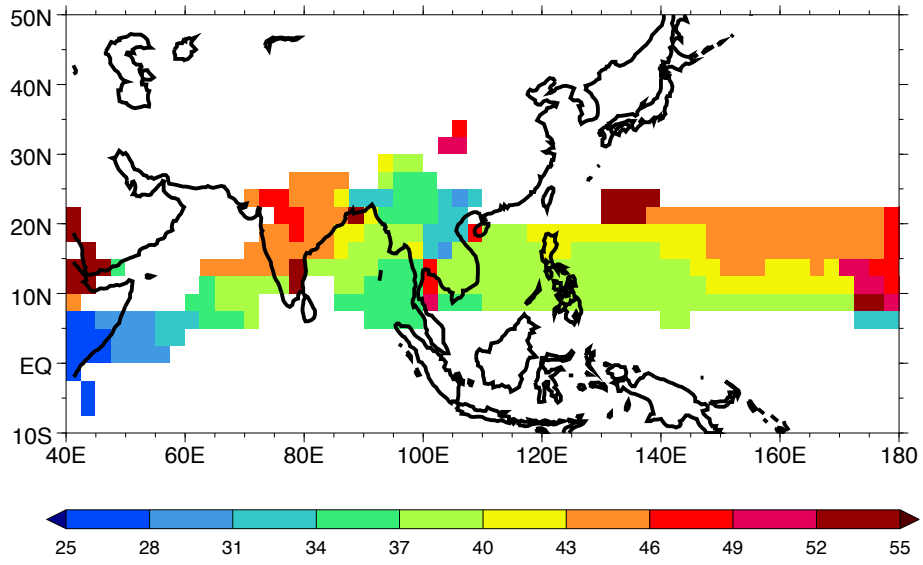
MPI-ESM-LR



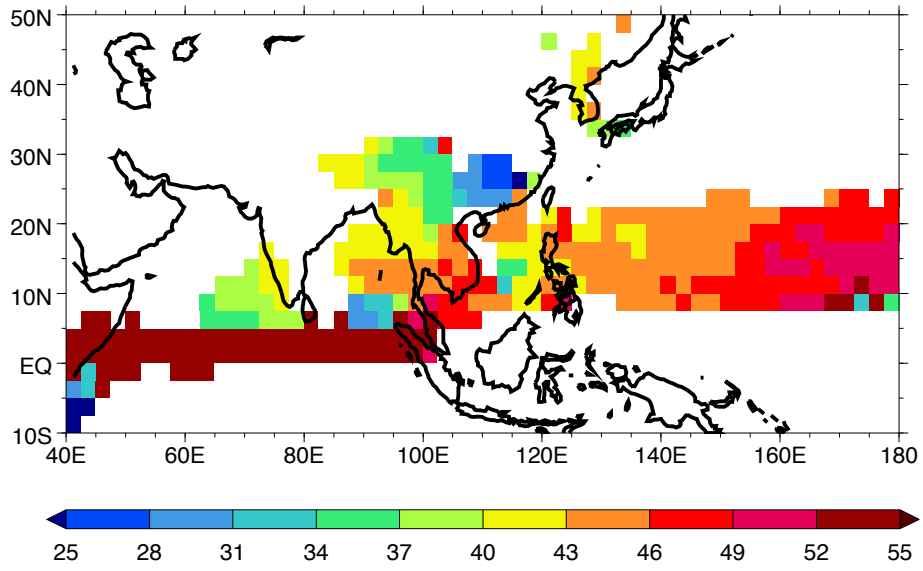
echam5/mpi-om



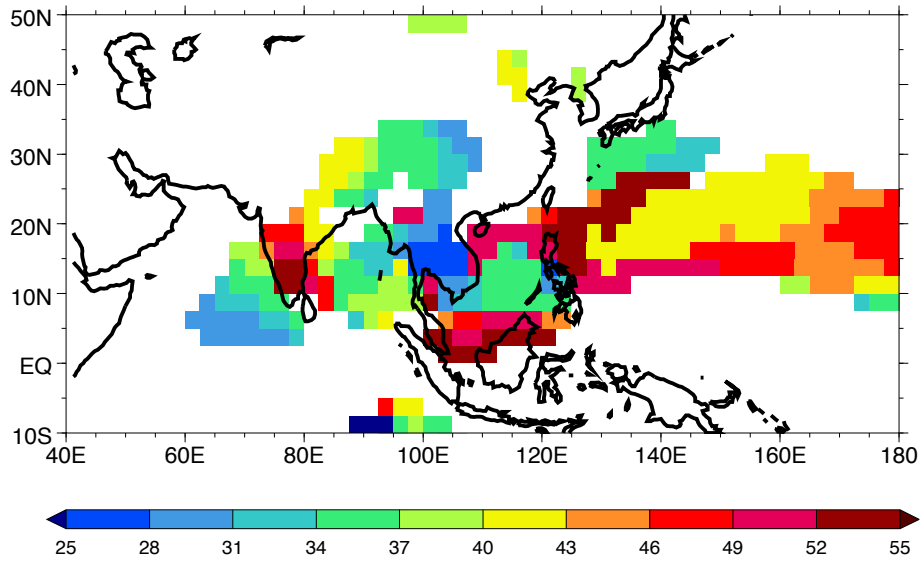
echo-g



MRI-CGCM3



mri-cgcm2.3.2



NorESM1-M

