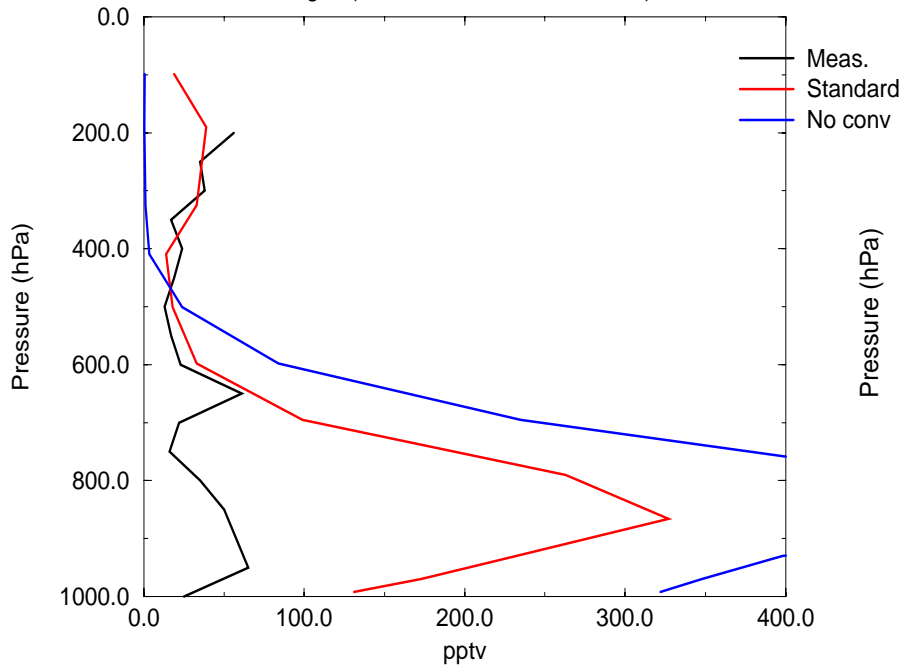


# CCM-Oslo

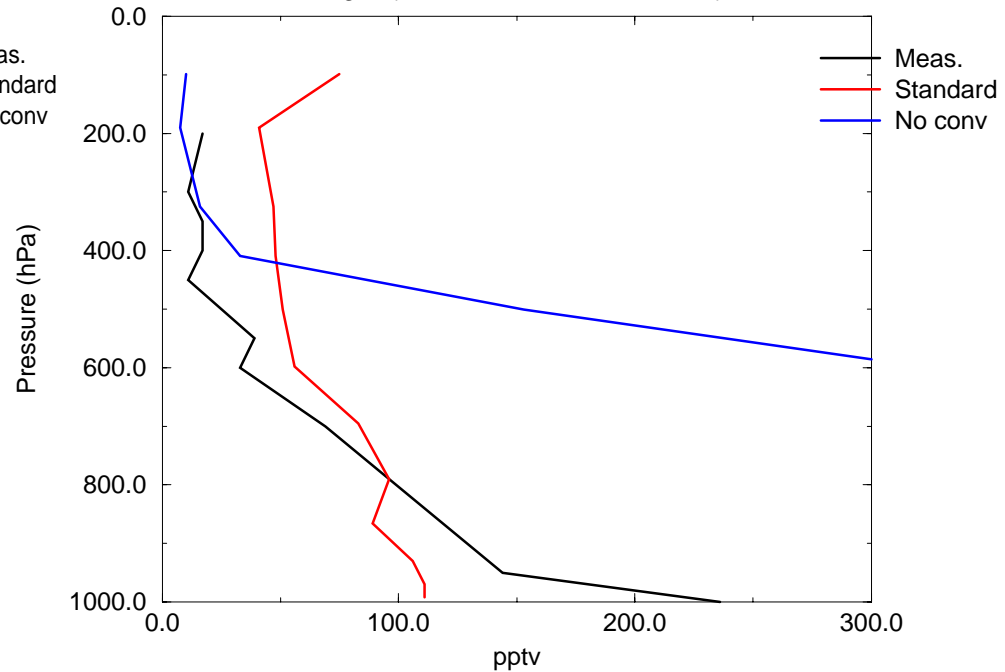
- **CCM3:T42L16, semi-Lagrangian,**
- **Mass-flux deep-convection** (Zhang and McFarlane, 1995)
- **SW-radiation: 2-stream delta-Eddington**
- **18 spectral intervals, 11 bands for aerosol optics,**
- **LW-absorption by O<sub>3</sub>, H<sub>2</sub>O, CO<sub>2</sub>, O<sub>2</sub>, cloud droplets, aerosols**
- **Test of parameterisation of transport and scavenging in deep convection**
  - Standard: All tracers transported by deep convection. In-cloud scavenging parameterised by assuming all of the aerosol mass is subject to scavenging below level of maximum precipitation creation
  - No convection: The tracers are not transported by deep convection, nor subject to any additional in-cloud scavenging.

# Why test convection

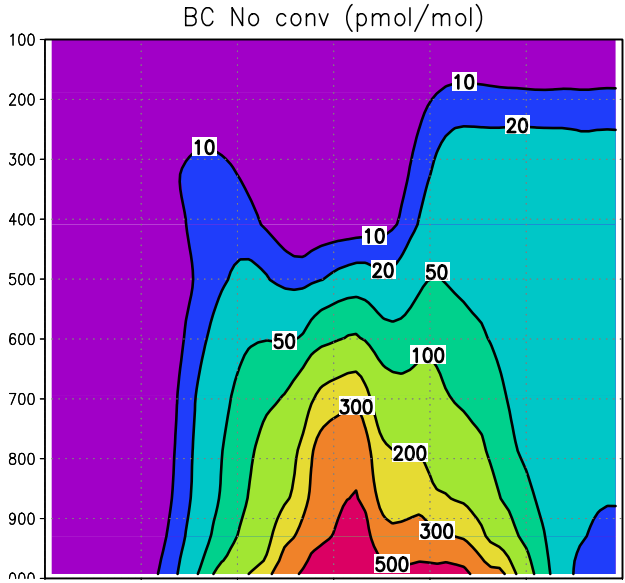
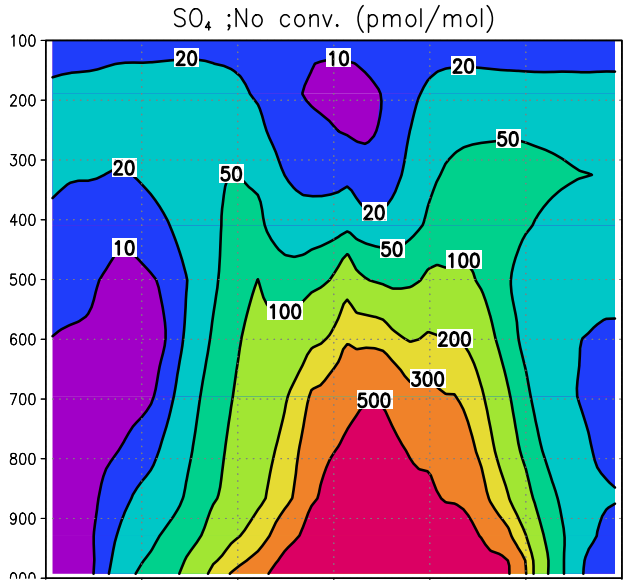
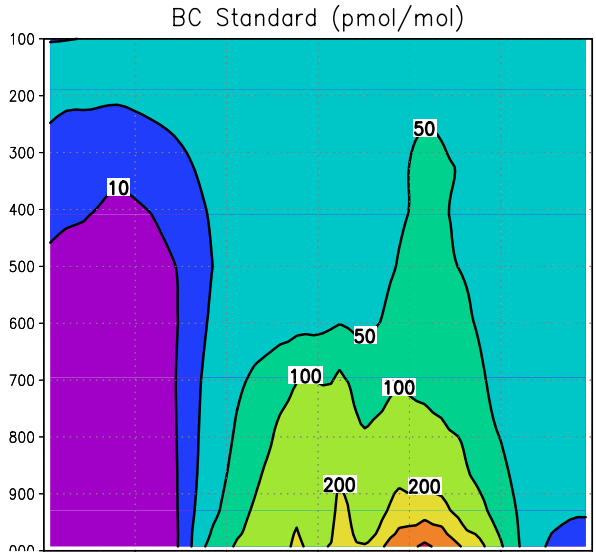
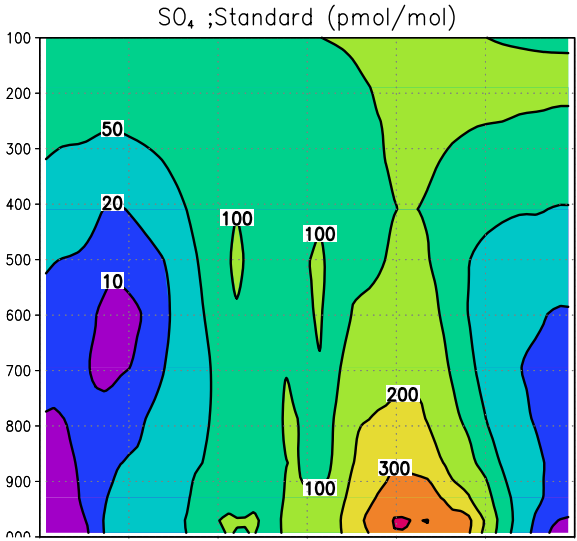
**SO<sub>2</sub> Guam**  
SO<sub>2</sub> concentration GUAM  
Region(-9.5 to 29 N, 144 to 152.5 E)



**SO<sub>4</sub> Guam**  
SO<sub>4</sub> concentration GUAM  
Region(-9.5 to 29 N, 144 to 152.5 E)

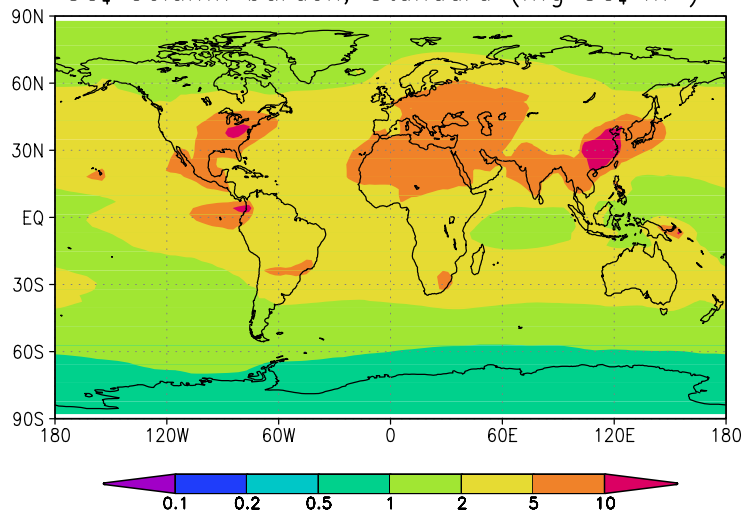


# Vertical distribution

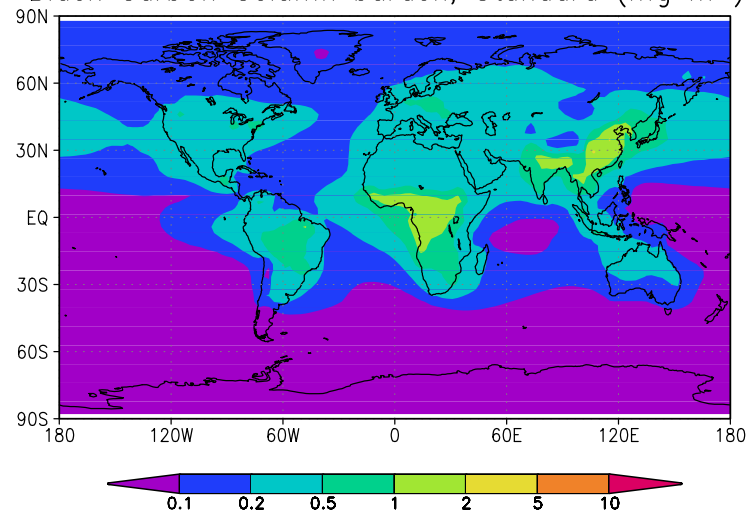


# Column burdens

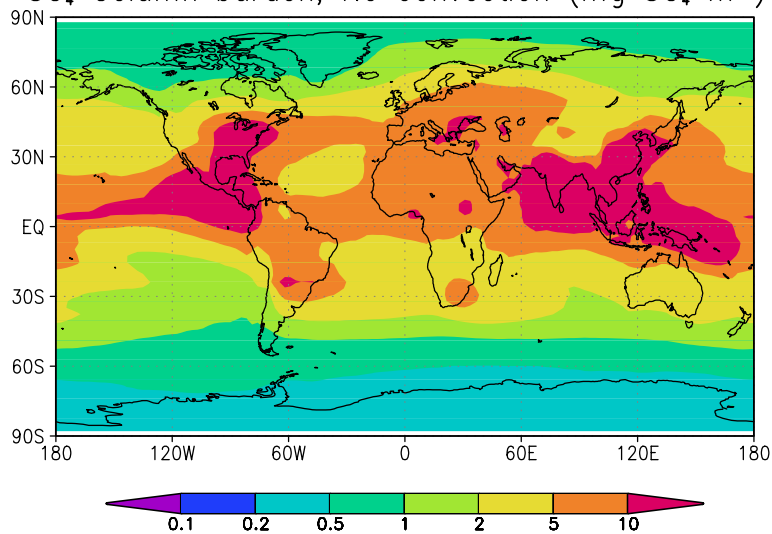
SO<sub>4</sub> Column burden; Standard (mg SO<sub>4</sub> m<sup>-2</sup>)



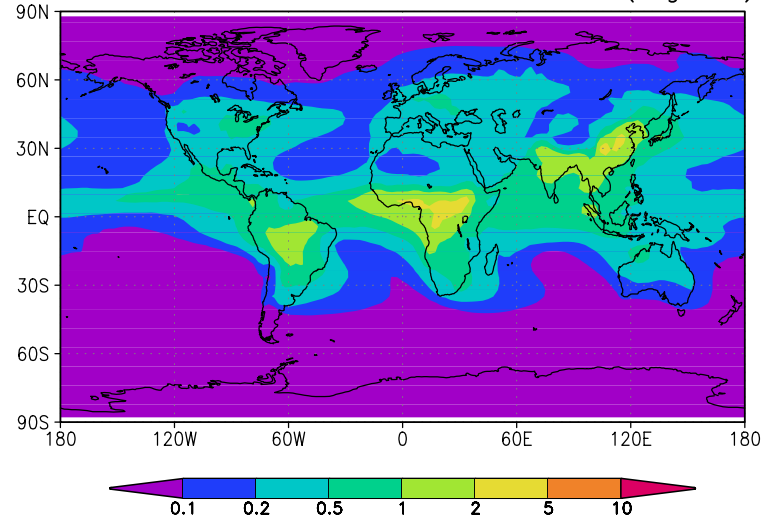
Black Carbon Column burden; Standard (mg m<sup>-2</sup>)



SO<sub>4</sub> Column burden; No convection (mg SO<sub>4</sub> m<sup>-2</sup>)



Black Carbon Column burden; No conv (mg m<sup>-2</sup>)

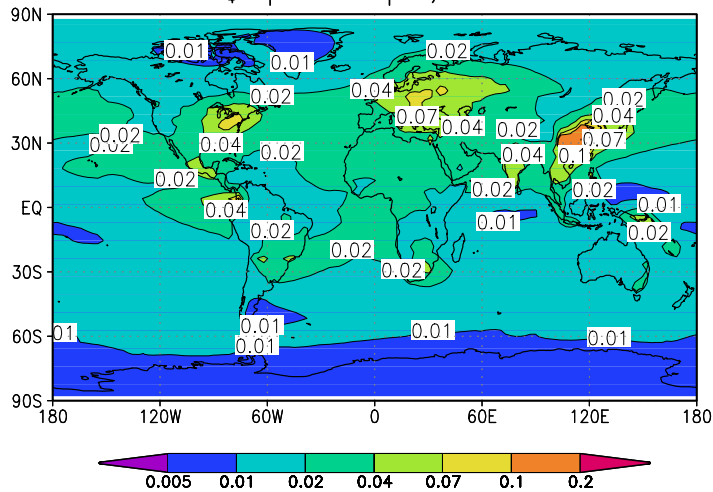


# Column burdens (mg S/C /m2)

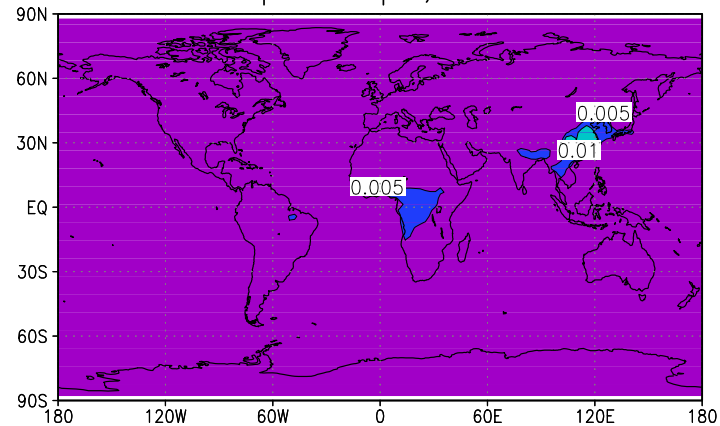
	SO2	SO4	BC	POM
TOT; Standard	0.72	0.99	0.22	1.30
TOT; Noconv	0.76	1.71	0.30	2.10
PRE; Standard	0.28	0.42	0.04	0.64
PRE; Noconv	0.30	0.76	0.06	0.99

# Optical depths

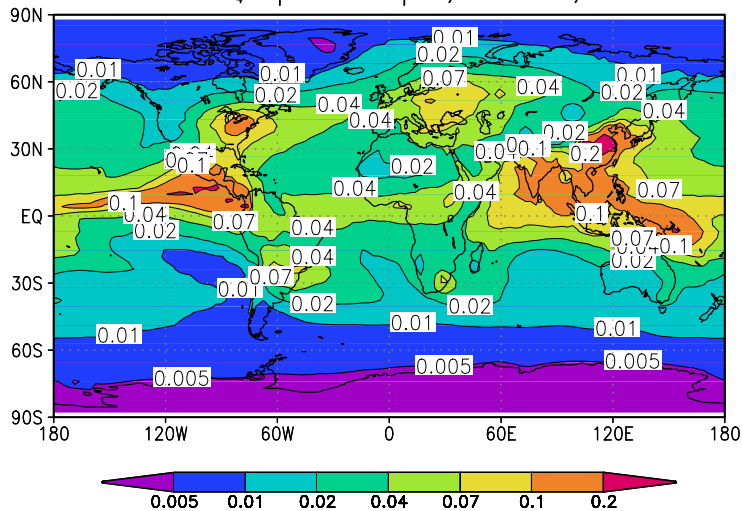
SO<sub>4</sub> optical depth; Standard



BC optical depth; Standard



SO<sub>4</sub> optical depth; No conv,



BC optical depth; No conv

