

Paleoclimatic Observations

2918 TRW series (B14)

1466 pass climate sensitivity screening

Identification of temperature and moisture sensitive observations and simulations

Interpolation to 208 cells 64x32 lon/lat grid

Spatial / temporal averaging to optimize S/N ratio

External Radiative Forcings

3x volcanic

4x solar

4x ALL

...

Model Simulations (HADCM3 1400-2000 C.E.)

Interpolation to 64x32 lon/lat grid

Simulated Observations (temp., precip. and lat.) at locations of paleoclimatic observations (TRW)

Debiasing:

- additive for temperature
- relative for precipitation

Proxy System Model (VSL)

TRW simulations for each proxy site considering season, parameter estimate and forcing

Spatial / temporal TRW averaging to optimize signal to noise ratio

$$\alpha = \beta_0 + \beta_1 \hat{\alpha}$$

Detection & Attribution (Total least squares implementation)