ERBE Radiative Fluxes and ISCCP Cloud Amounts/Heights

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Data
ERBE: Gridded data (2.5°×2.5°) consisting of DJF means averaged over five years (1985-1989).

ISCCP: The same as the above for cloud amount and cloud-top pressure, plus every-three-hour data for January 1988.
\[ N = -\frac{\text{SW CRF}}{\text{LW CRF}} \]

Western region

Southeastern region
\[ N = -\frac{\text{SW CRF}}{\text{LW CRF}} \]

**Western region**
- Mean = 0.787
- CV = 6.1%

**Southeastern region**
- Mean = 0.526
- CV = 16.1%

ERBE data
ISCCP cloud-top pressure
Western Region

Mean = 390
SD = 53

January 1988
Monthly mean
Mean = 386
SD = 72

January 1988
Every three hours
Mean = 383
SD = 164
Western Region

\[ N = - \frac{\text{SW CRF}}{\text{LW CRF}} \]

[Graph showing scatter plot with lines for 300 mb, 200 mb, and 100 mb levels, with data points and two lines labeled CCM3 CRM and ERBE.]
Two Interesting Studies

*Hartmann, Moy and Fu* [2001]: Implemented every three hourly ISCCP cloud-top pressures, plus other input data for the tropical western Pacific, into a radiative transfer model and obtained TOA SW and LW radiative fluxes that were in good agreement with ERBE.

*Taotao Qian* [2003]: Implemented monthly-mean HIRS cloud-top pressures, plus other input data for the tropical western Pacific, into a radiative transfer model and obtained TOA SW and LW radiative fluxes that were in good agreement with ERBE.