

CERES/Terra Regional Mean TOA Flux Uncertainties



Flux Bias Definitions

- ADM mean albedo bias in angular bin $(\theta_o, \theta_j, \phi_k)$:

$$\Delta A(\theta_o, \theta_j, \phi_k) = \bar{A}_{ADM}(\theta_o, \theta_j, \phi_k) - A_{DI}(\theta_o)$$

- Footprint-weighted ADM mean albedo bias:

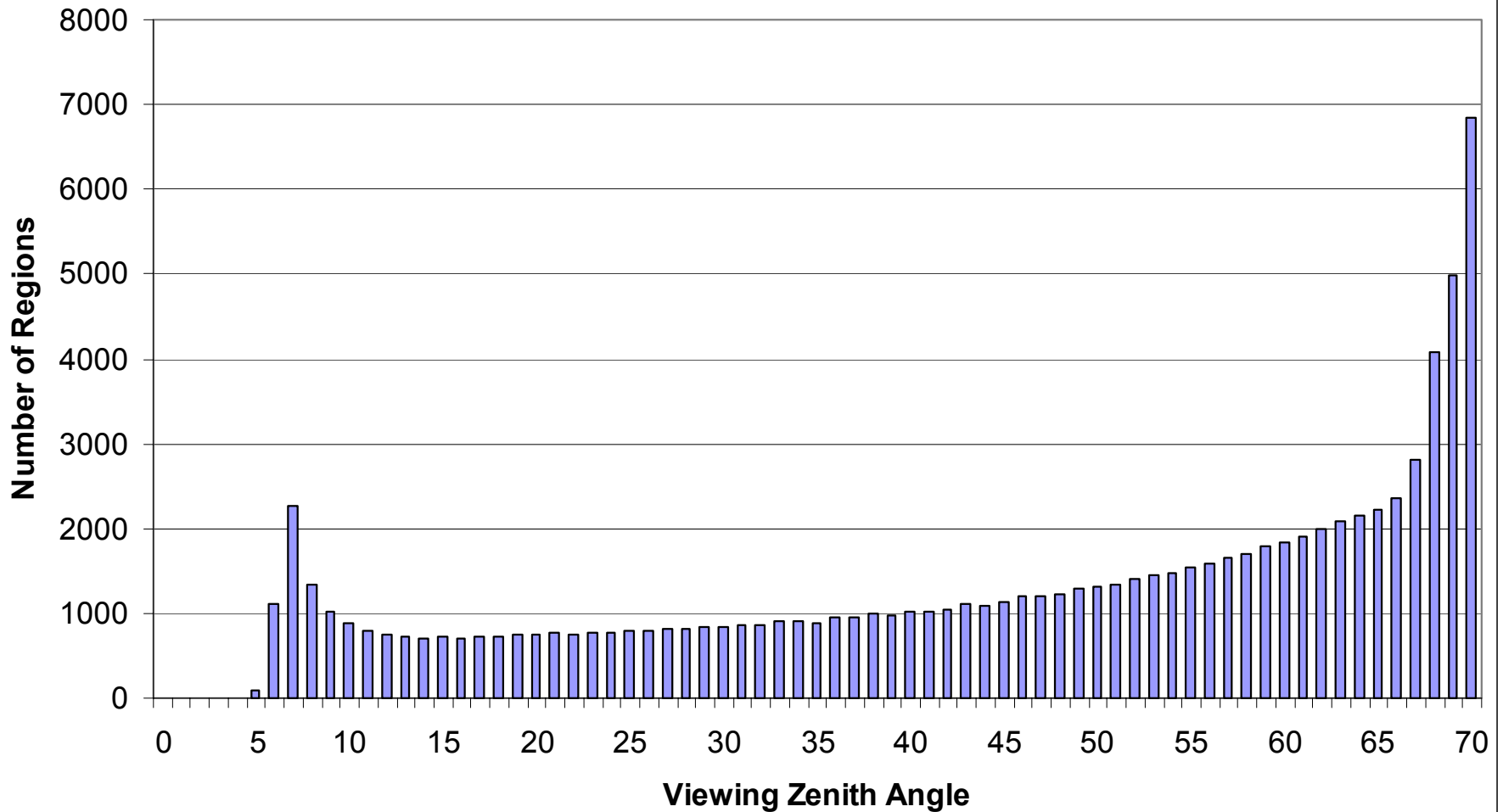
$$\overline{\Delta A}(\theta_o) = \frac{1}{n_k} \frac{1}{n_j} \sum_{k=1}^{n_k} \sum_{j=1}^{n_j} \Delta A(\theta_o, \theta_j, \phi_k) w_j$$

where w_j is a weighting factor accounting for the relative effect of different viewing zenith angles on gridded time-averaged fluxes.

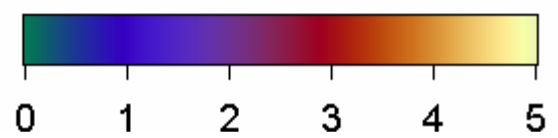
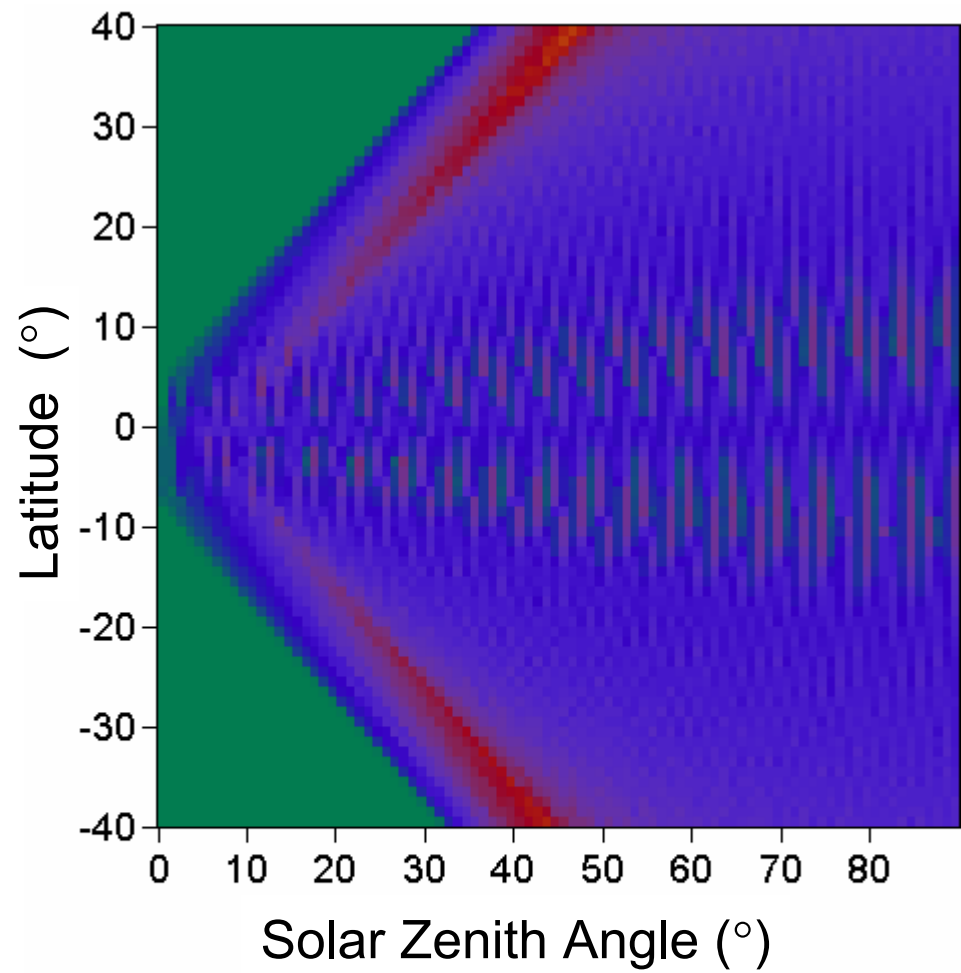
n_k and n_j are the number of relative azimuth and viewing zenith angle bins.



Crosstrack Incidence of Regional Mean VZAs One Month of CERES Data



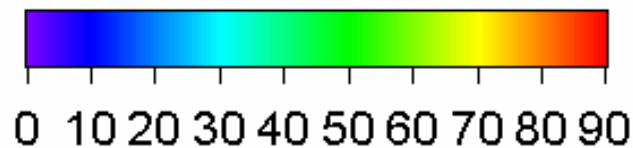
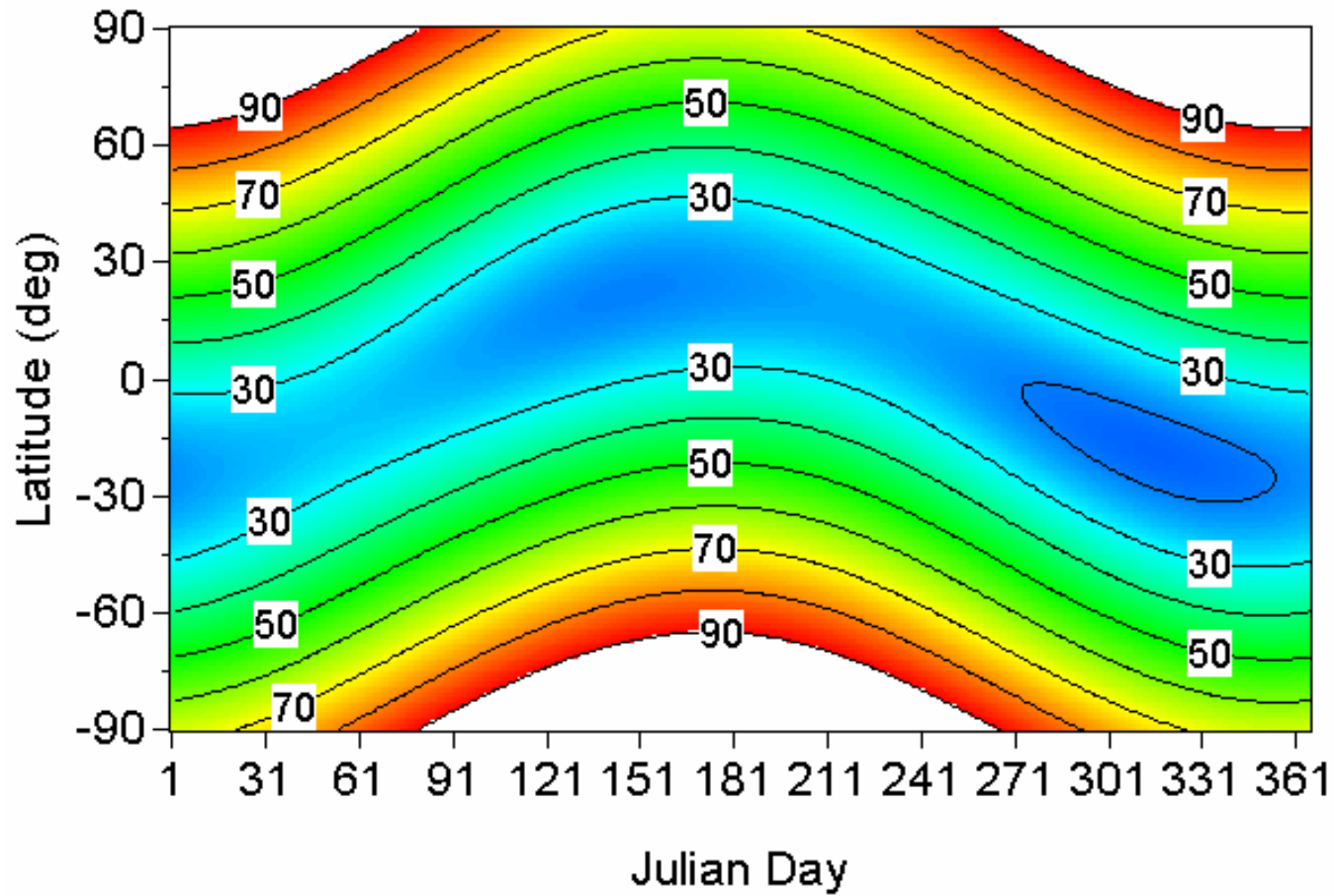
Solar Zenith Angle Distribution by Latitude (March 1998)



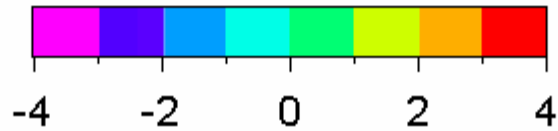
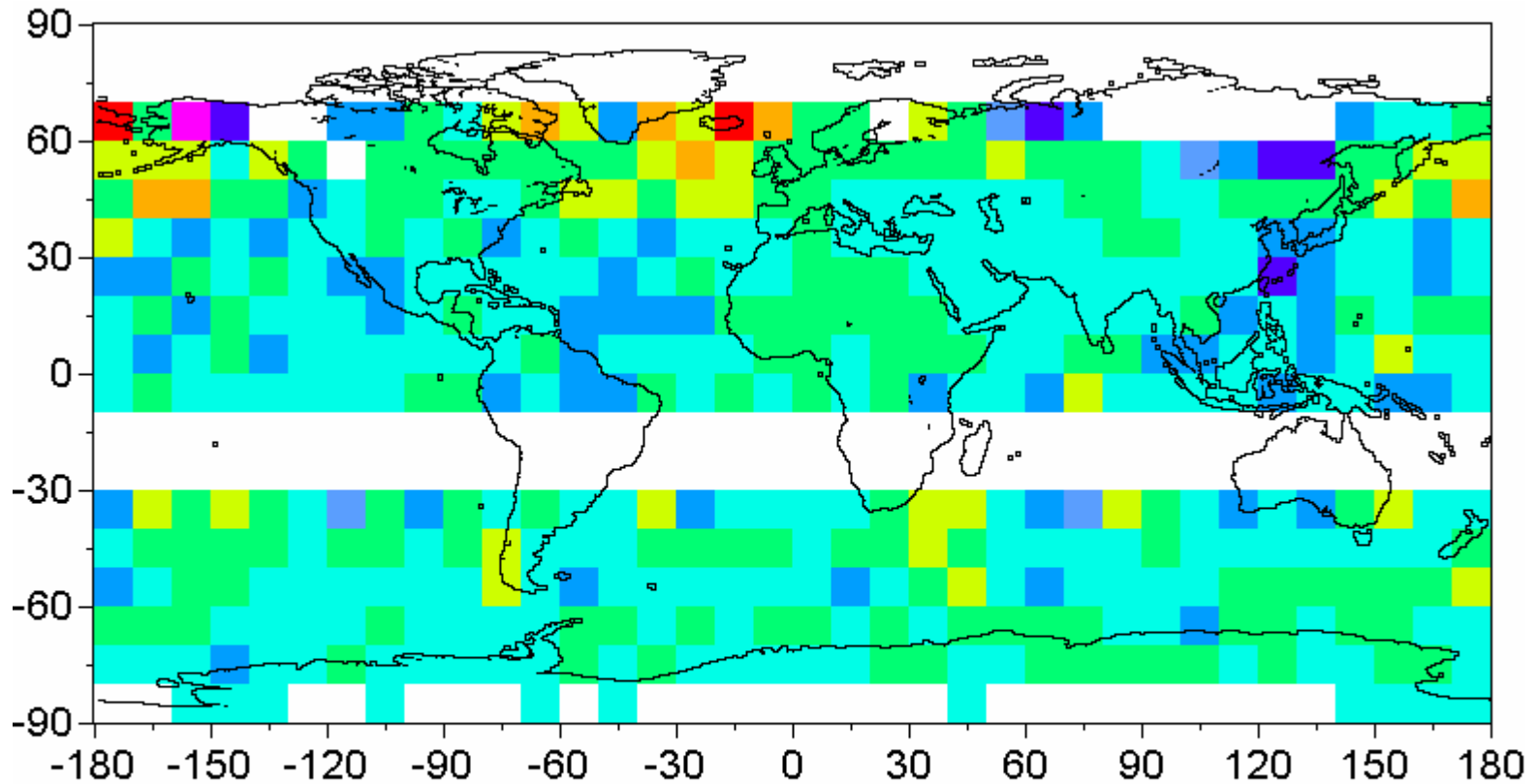
Relative Frequency (%)



Terra Solar Zenith Angle Distribution



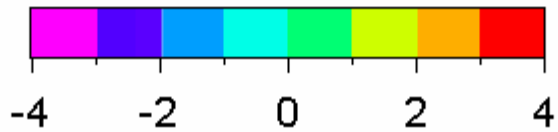
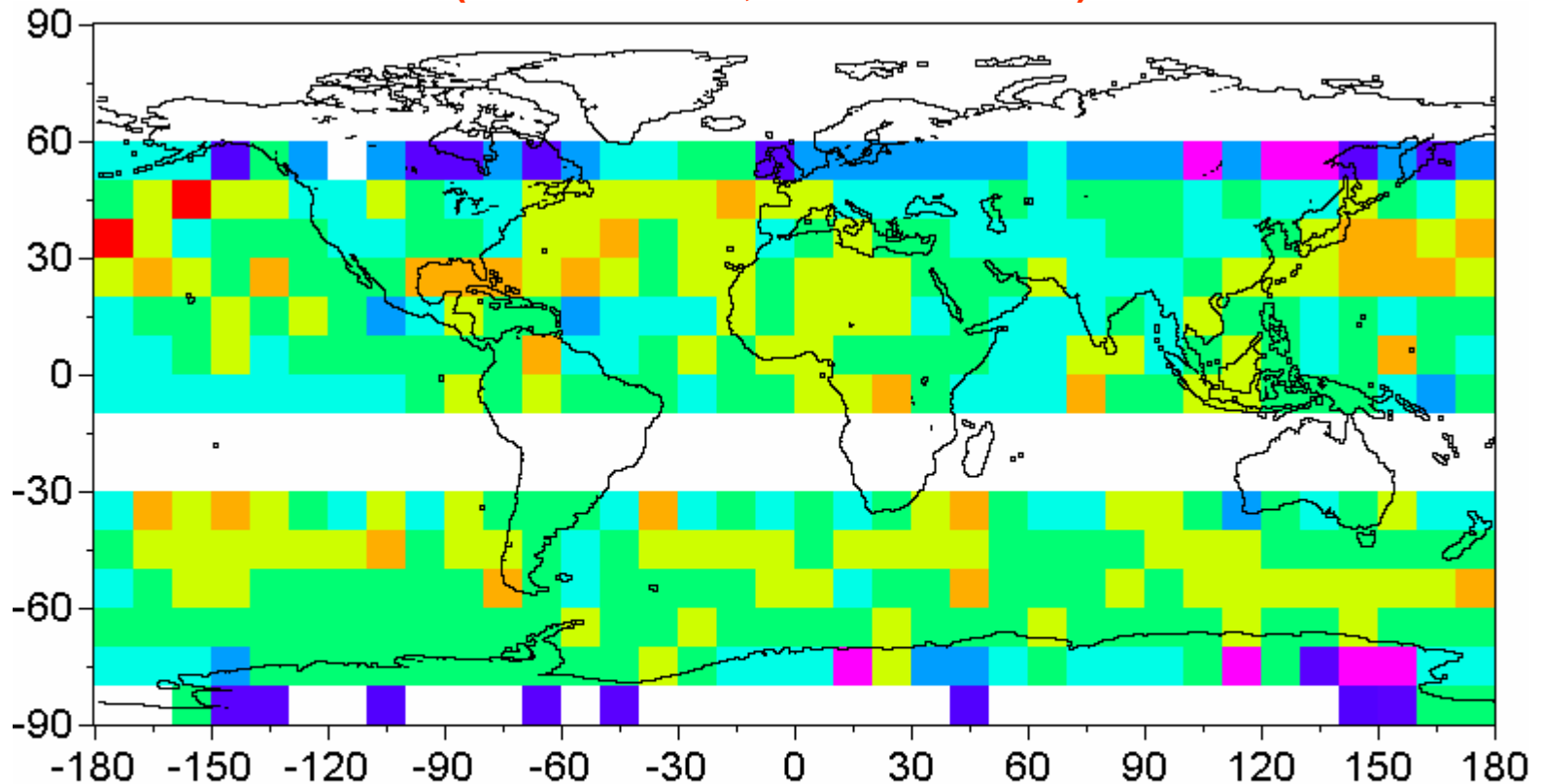
Regional SW TOA Flux Uncertainties: CERES/Terra SSF (TRMM SSF Ed2B ADMs; Nov-Dec 2000)



ADM - DI Flux Difference (W m⁻²)



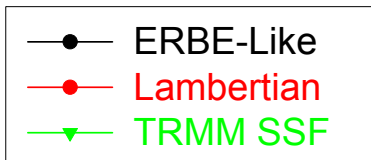
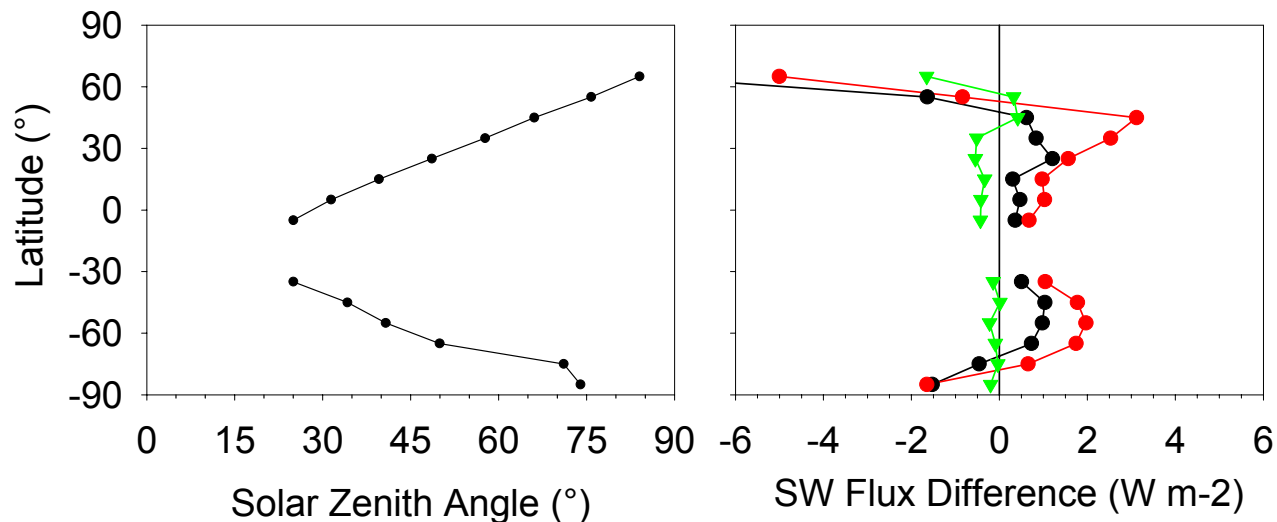
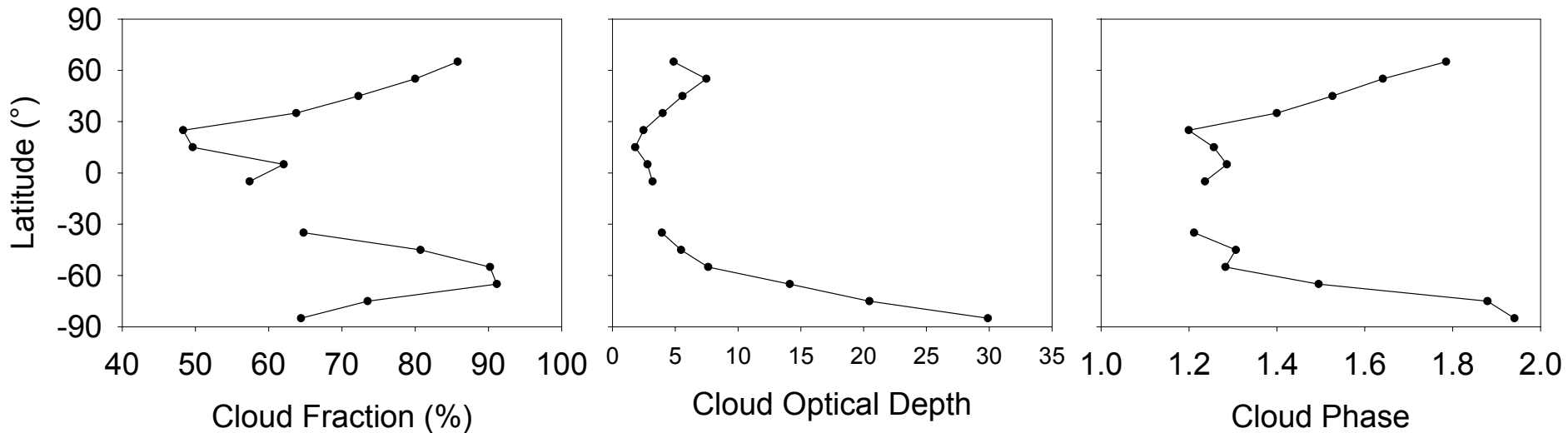
Regional SW TOA Flux Uncertainties: CERES/Terra ERBE-Like (ERBE ADMs; Nov-Dec 2000)



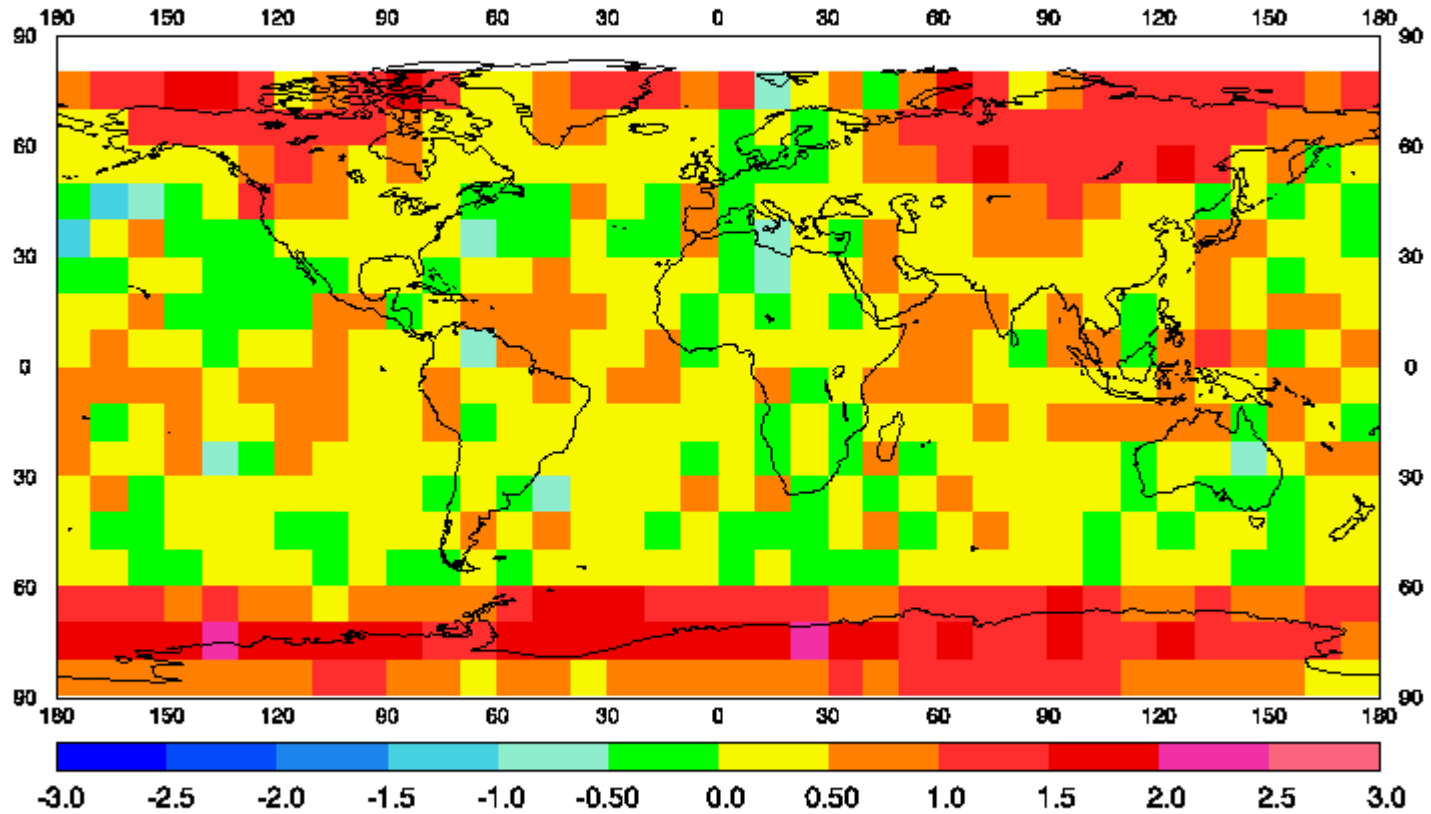
ADM – DI Flux Difference ($W m^{-2}$)



CERES/Terra (Nov1 - Dec 31, 2000)



Longwave Mean Regional Flux Difference (Terra)
ED2B - DI (Nov/Dev 2000)



Latitudinal ADM Mean Flux Bias CERES/Terra $\theta < 70$

Nov/Dec 2000

Apr/May 2001

