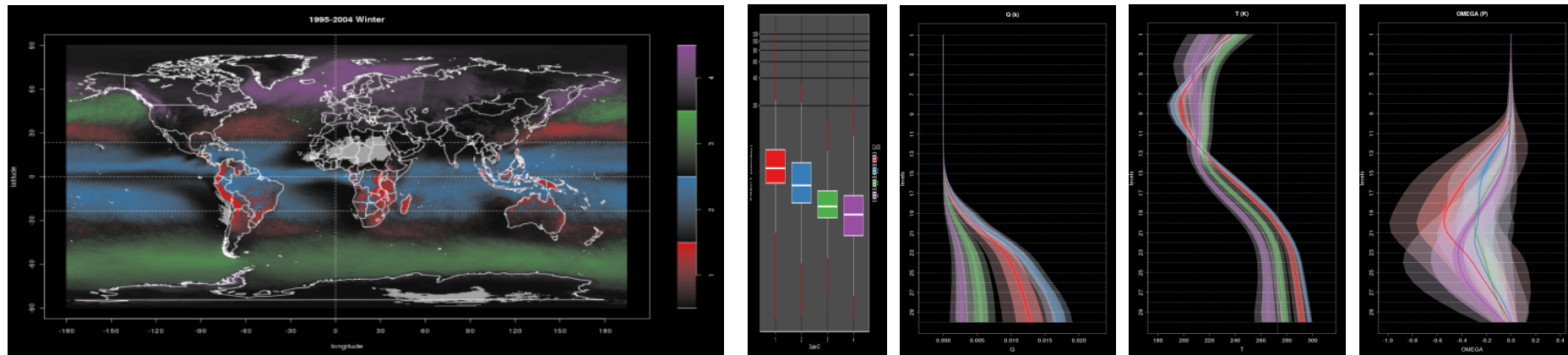# Exploration of Climate Data with pbdR

- **2013 INCITE "Attributing Changes in the Risk of Extreme Weather and Climate" Michael Wehner, PI**

  - High resolution atmospheric model, CAM 5.1 (~25 km resolution)

  - Resolves processes responsible for extreme precipitation and storms

- **R and pbdR used for scalable analytics and graphics**

  - Advanced clustering capability (EM algorithm for Gaussian mixture models)

Behavior of extreme precipitation across atmospheric layers of moisture, temperature, and wind

W.-C. Chen, G. Ostrouchov, D. Pugmire, Prabhat, M. Wehner. A Parallel EM Algorithm for Model-Based Clustering Applied to the Exploration of Large Spatio-Temporal Data. *Technometrics* (online, in print: Fall 2013).