Topic #3

- Topic: Modelled Variability of Clouds and Precipitation
- Datasets: CMIP5 simulations of total cloud fraction, precipitation and surface radiative fluxes
- Geographic foci: global, tropics (15S-15N), subtropics (15-30S/N), mid-latitude (30-50S/N) and selected regions (ITCZ, northeast Pacific and southeast Pacific)
- Questions: How do climate models simulate the spatial and temporal variabilities of clouds and precipitation? Are model performances related to models' climate sensitivity?
- Approach: compare modeled and observed clouds and precipitation in 2-D maps, zonal-mean plots, time series, scatter plots, difference plots; conditional sampling plots; then group models by high-climate-sensitivity and low-climate sensitivity models
- Models' equilibrium climate sensitivity (K):
  - CCCMA/CANESM2: 3.69
  - GFDL/ESM2G: 2.39
  - GISS/E2H: 2.30
  - GISS/E2R: 2.11
  - NCAR/CAM5: 4.1
  - NCC/NORESM: 2.8
  - UKMO/Hadgem2-ES: 4.59
- Contact Scientist: Dr. Hui Su (Hui.Su@jpl.nasa.gov)