CREST HIRES Summer 2016 Research Project

Theme\Group : Land Processes and Water Resources

Trends in water, wind and solar resources over recent decades and connections with climate forcings and variability:

Climate change and implications for precipitation and river flow

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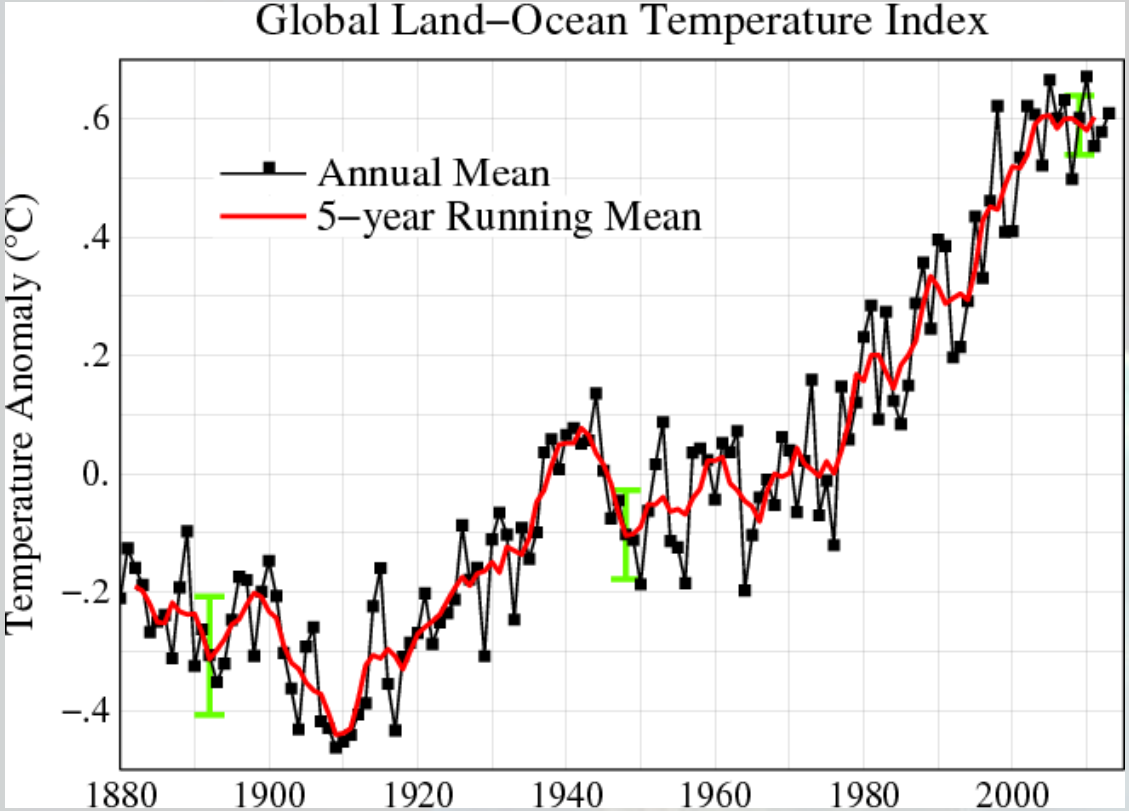
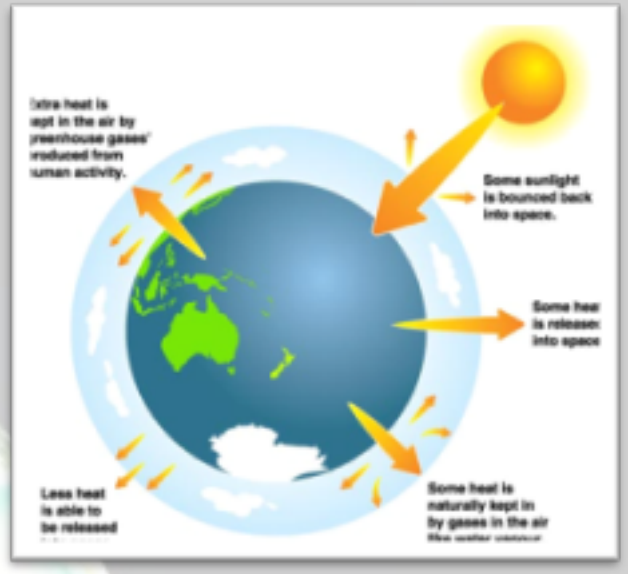


http://data.giss.nasa.gov/gistemp/graphs_v3/



Global mean temperature:

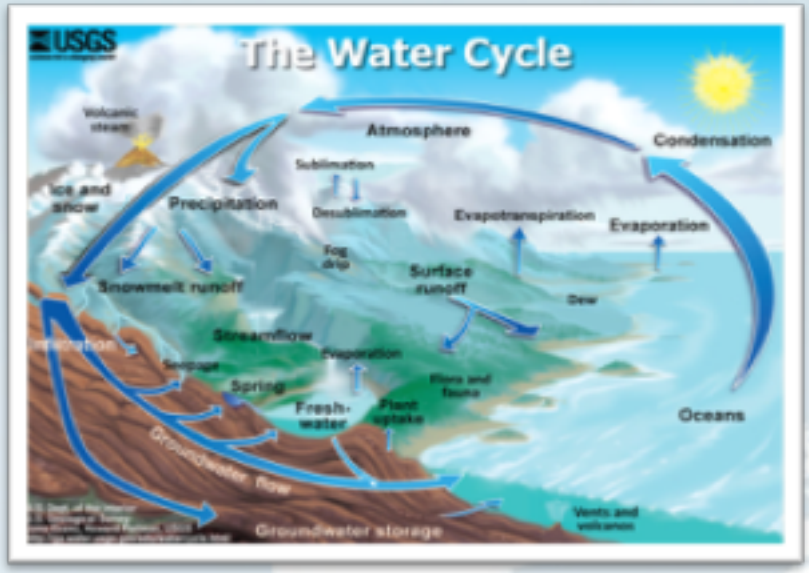
≈ 0.8 °C increase since 1901

(IPCC – R4)

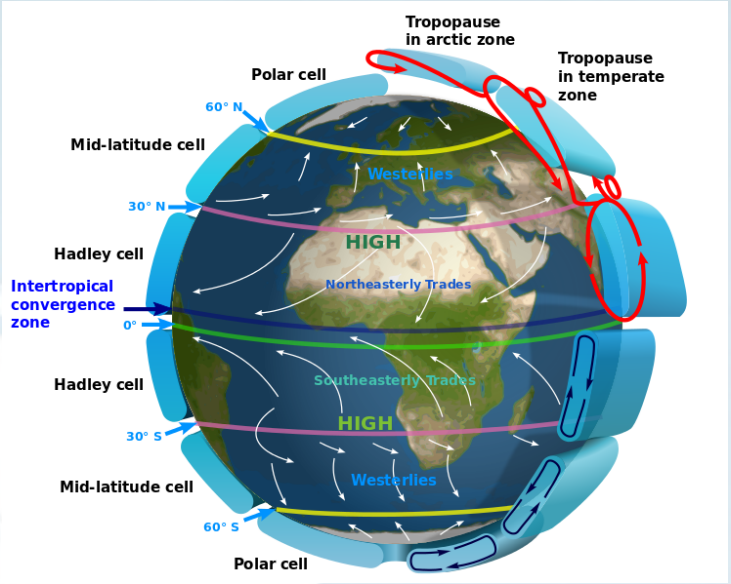
Clausius-Clapeyron equation

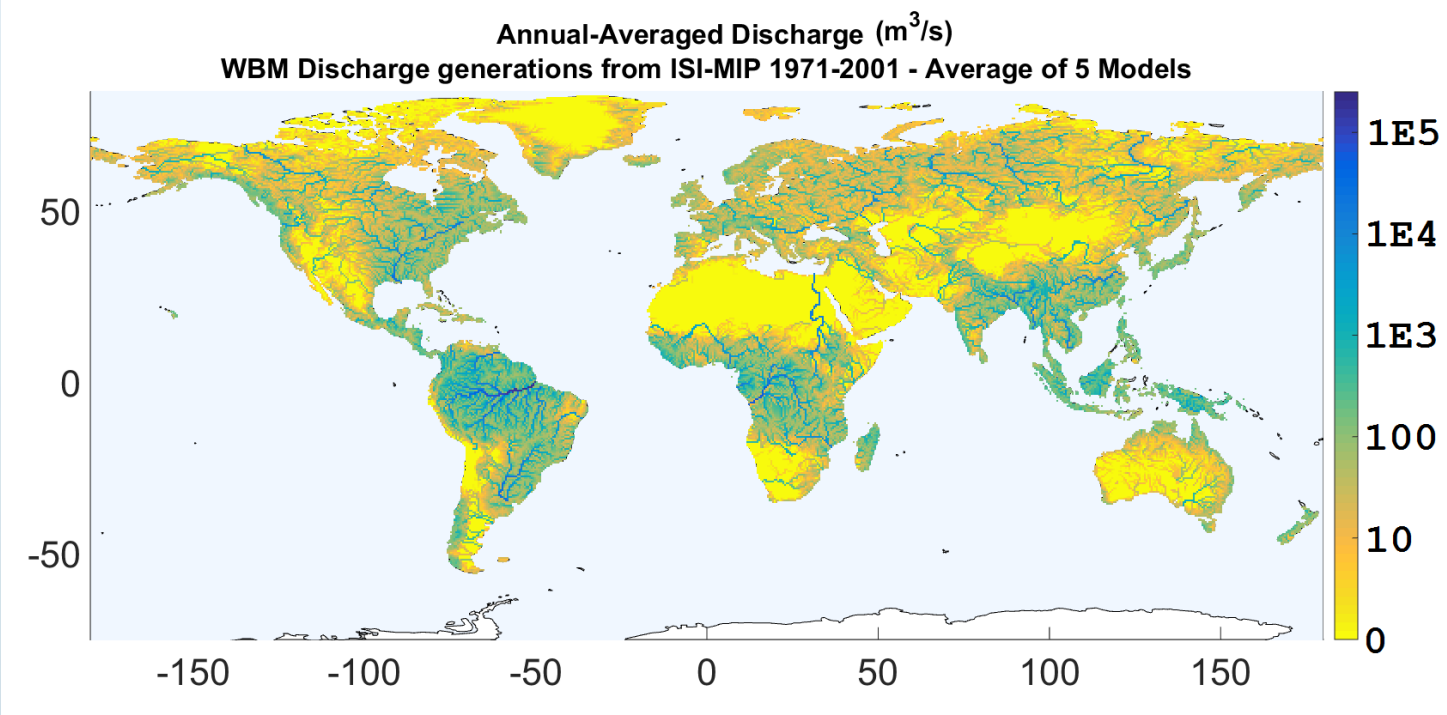
1 ºK increase in temperature ⇒ 7% increase in atmospheric water vapor content

Hydrological Cycle

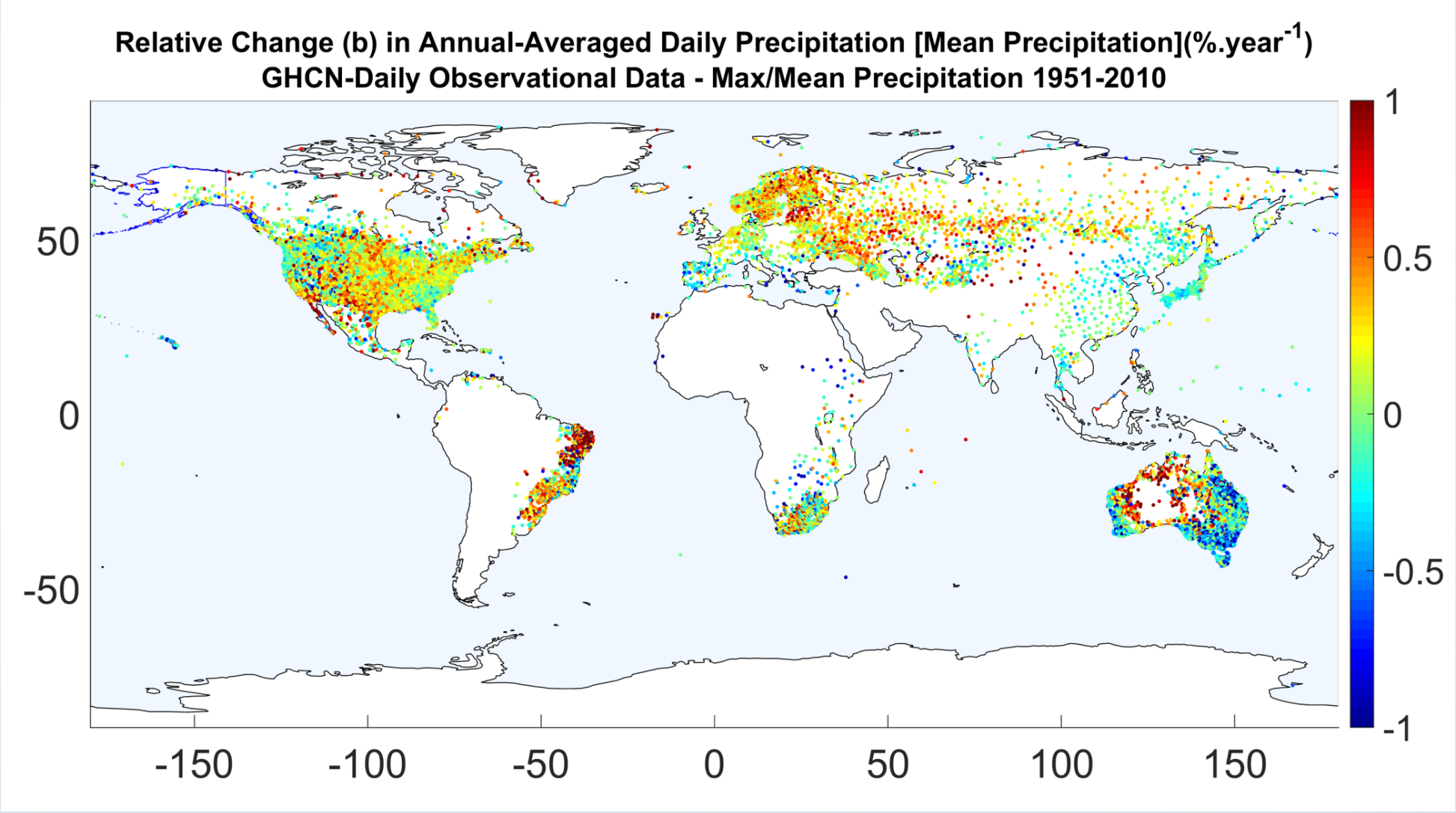


Atmospheric Circulation

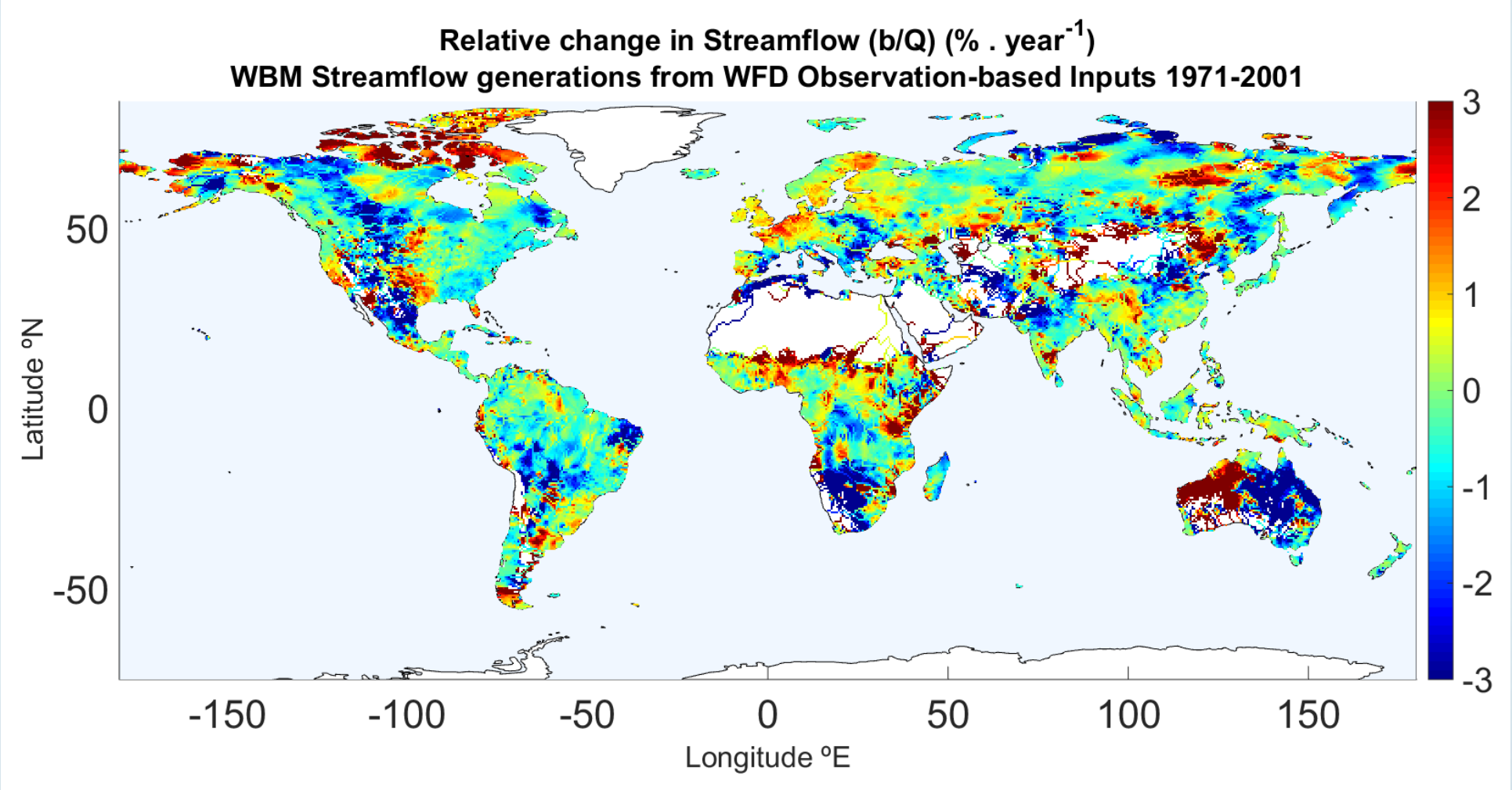




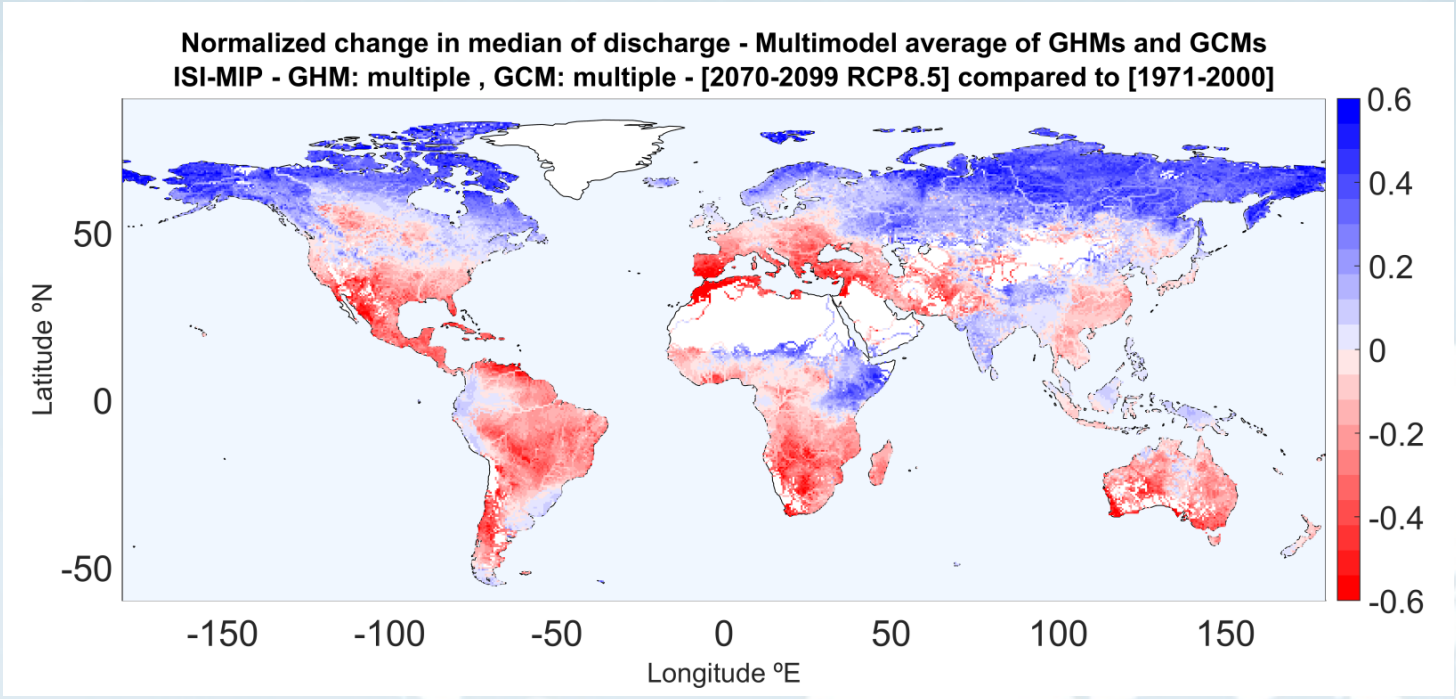
Climate Change and Precipitation

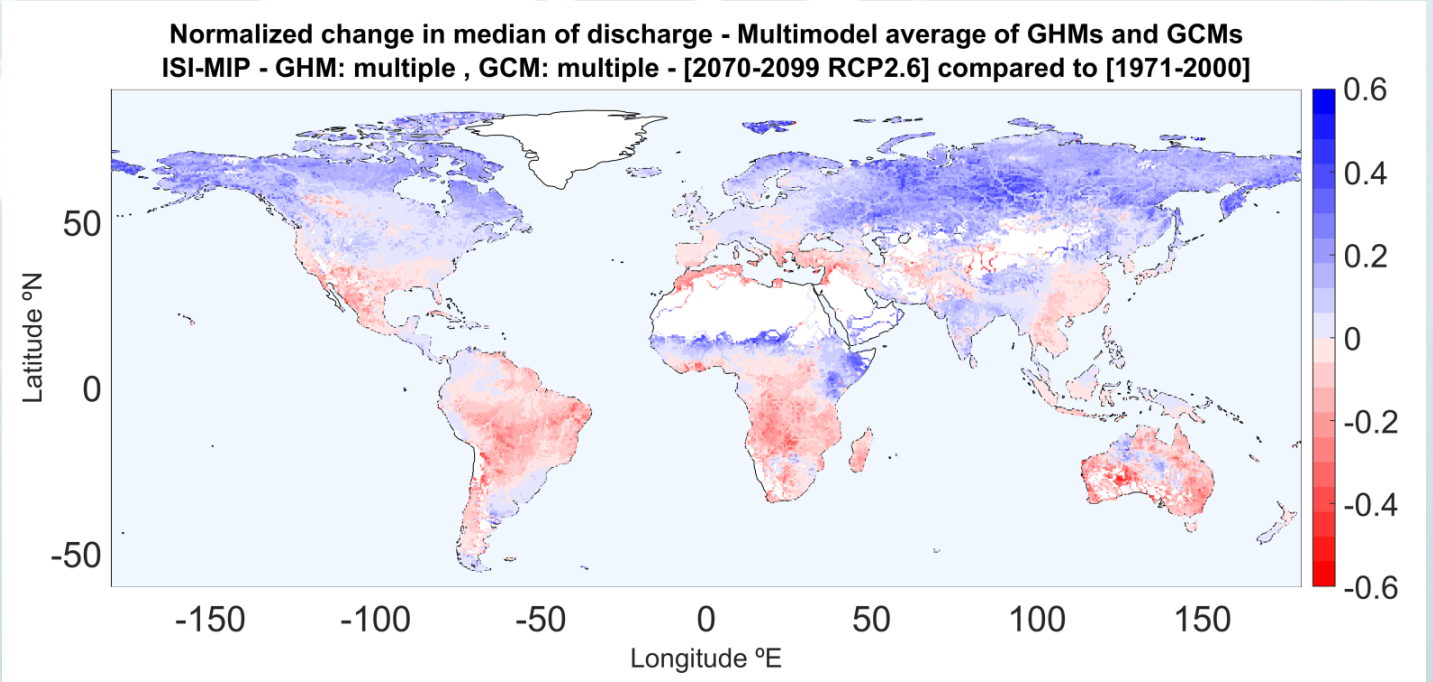


Climate Change and Streamflow



Climate Change and Streamflow in the 21st Century





Project Objectives: Statistical analysis on available data to detect

- ❑ Trends in climate indices: Precipitation, Temperature, Streamflow
- ❑ Correlation between the climate indices

- ✓ Observational Data
- ✓ Climate Model Simulations

Computer Programing with MATLAB, Python

Location: Steinman Hall, ST-424

Thank You