**Seasonal effects of the Southern Oscillation and Bermuda High on freshwater delivery to the central Georgia coast**

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**Abstract**

Freshwater delivery to the central Georgia coast is alternately correlated with the Southern Oscillation (SOI) and the Bermuda High (BHI) (or Caribbean High). Southern Oscillation Index (SOI) indices were computed from Tahiti-Darwin pressure (SOI) and surface pressure difference between Bermuda and New Orleans, using the same NCAR station data as Katz et al. (2003). The Bermuda High Index (BHI) describes the east-west position of the southern pole of the NHAO, which has more of an influence on the southeastern U.S. weather than does the north-south NA. When the Bermuda High extends westward over the continent, hurricanes and frontal weather systems from the west enter the southeastern U.S., resulting in below-normal rainfall. Conversely, when the Bermuda High is centered over the Atlantic Ocean, above-normal rainfall occurs.

**Data Treatment**

Precipitation analysis of monthly and seasonal time series was performed using two methods: (1) linear regression analysis and (2) linear correlation analysis. Linear correlations among the pre-whitened series are presented on the quarterly maps, below. Presence of a line indicates a significant correlation (p<0.05). Color of the line indicates the season of the explanatory variable, which may be lagged relative to the dependent variable. Width of the line indicates the strength of the linear correlation (Pearson r).

**Results**

Linear correlations among the pre-whitened series are presented on the quarterly maps, below. Presence of a line indicates a significant correlation (p<0.05). Color of the line indicates the season of the explanatory variable, which may be lagged relative to the dependent variable. Width of the line indicates the strength of the linear correlation (Pearson r). Presence of a line indicates a significant correlation (p<0.05). Color of the line indicates the season of the explanatory variable, which may be lagged relative to the dependent variable. Width of the line indicates the strength of the linear correlation (Pearson r).

**Consequences for GCE-LTER**

- Data treatment
  - Precipitation analysis
  - Linear regression analysis
  - Linear correlation analysis

- Future work
  - Seek links in other regions
  - Consider links to other climate signals

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**References**


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**Future Work**

- Seek links in other regions
- Consider links to other climate signals
- Investigate the potential effects of other climate signals on freshwater delivery

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