

**Global wind patterns and associated snow anomalies over Eurasia: predictability and influence on large scale monsoon circulation (I) Observed dataset**

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In this study we focus on (the relationship between):

- (i) the global long-lasting (persisting from winter to the early summer) upper tropospheric anomalous circulation;
- (ii) the tropical SST anomalies (which can determine the kind of flow (i))
- (iii) the snow depth anomalies over Eurasia ( which can be determined by (ii) through (i));
- (iv) and the large scale monsoon circulation in the following summer (related to (i), (ii) and (iii)).

The dataset is the 40-year record (1958-98) of NCEP/NCAR re-analyses for sea surface temperatures and upper air fields, while, for snow depth fields, the Historical Soviet Daily Snow Depth dataset (based on observations at a series of 284 World Meteorological Organization (WMO) stations throughout the Former Soviet Union) is used.

First the leading variability patterns of the atmospheric flow are searched for by calculating empirical orthogonal functions (EOFs) of seasonal anomalies. The Eurasian snow depth anomalies and SST anomalies associated with the leading circulation patterns are then identified by computing, for each season, the covariance between the principal components (associated with the EOFs) and the snow/SST anomaly time series. The relationship with the large scale monsoon circulation is evaluated through (lagged) correlations with the Webster and Yang index.

**Wednesday II (Talk)**