# Spatio-temporal filling of missing points in geophysical data sets

## The problem

Missing data is key difficulty for spatial-temporal variability analysis and many other climate research problems.

## Singular Spectrum Analysis (SSA)

SSA diagonalizes the lag-covariance matrix to obtain spectral information on the time series.

## The solution

We propose an iterative algorithm that uses SSA to utilize temporal (and spatial for multivariate dataset) correlations in the data to fill in the missing points.

# Why SSA works well for filling missing points

SSA can be an aid in the decomposition of time series into a sum of components, each having a meaningful interpretation.

The eigenvectors of the lag-covariance matrix are called temporal empirical orthogonal functions (EOFs). Interpolating EOFs we can estimate the missing values in the data.