

# Forecasts of Nino-34 SST Anomalies Based on Singular Spectrum Analysis Combined with the Maximum Entropy Method

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Singular spectrum analysis (SSA: Vautard and Ghil 1989) and the maximum entropy method (MEM: Penland et al.1991) are combined to produce long-lead forecasts of sea-surface temperature (SST) anomalies averaged over the Nino-34 area. The forecast is for up to one year ahead based on data from January 1950 through May 2012.

This forecast follows up on earlier forecasts using combined SSA-MEM methodology for the SOI index by C. Keppenne and M. Ghil, starting in the March 1992 issue of this Bulletin, on those of N. Jiang, M. Ghil and J. D. Neelin for Nino-3 SST anomalies, starting from March 1995, and on those of A. Saunders, M. Ghil and J. D. Neelin from September 1997. Detailed information on the forecast method can be found in Keppenne and Ghil (1992) and in the March 1995 issue of this Bulletin (also Jiang et al. 1995). Briefly, the time series is filtered by SSA so that only the statistically significant low-frequency components are retained. Next, MEM is applied to advance these components in time. The extended components are then used in the SSA reconstruction to produce the forecast values.

The current SSA-MEM forecast for Nino-34 SST anomalies (Fig. 1) is for a near-neutral conditions through 2012.

## References:

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