

High frequency intrinsic modes in El Nino Southern Oscillation Index

M. Ausloos (1) and **F. Petroni** (1)

(1) GRAPES, B5, Sart Tilman, B-4000 Liege, Belgium

Recent daily data [Jan. 01, 1999- Sept. 10, 2006] of the Southern Oscillation Index have been analyzed. The power spectrum indicates major intrinsic geophysical short periods. After cleansing the signal of those periodicities a global and temporal de-trended fluctuation analysis is performed to reveal the nature of stochastic structures in the signal and specific correlations. Two scaling regimes are seen and discussed. A marked crossover at about 24 days is found corresponding to the Branstator-Kushnir wave. The signal is reconstructed and extrapolated for forecasting purpose for the next 3 years by means of a superposition of sinusoidal functions. The same superposition is then used to reconstruct the much longer time series of monthly data [Jan. 1866-Sept, 2006].