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# Maximum Likelihood Estimates of trend- and memory-coefficients in climatic time series.

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Global land temperature and ocean temperature can be modeled as stochastic processes with a memory, given by the Hurst exponent. The temperature data also have trends, which may yield spuriously high Hurst exponents if not taken into consideration. In this study the global land temperature and the global ocean temperature increments are modeled as a fractional Gaussian noise with a polynomial trend. The Maximum Likelihood method is applied to estimate the noise parameters $H$ and $\sigma$, and the polynomial coefficients of the trend. Ensembles of synthetic fractional Gaussian noises with corresponding properties and different Hurst exponents from 0.6-0.9 are studied. The results are compared to another method for finding the Hurst exponent, the Detrended Fluctuation Analysis (DFA).