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Linear predictability: A sea surface height case study

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A benchmark of linear predictive skill of global sea surface height (SSH or η) is presented, complementing more complicated studies of η predictive skill. Twenty years of the ECCOv4 state estimate (1992-2012) are used, fitting ARMA(n, m) models where the order is chosen by the Akaike and Bayesian Information Criteria (AIC and BIC). The prediction on the basis of monthly detrended data shows skill generally of the order of a few months, with isolated regions of twelve months or more. With the trend, the predictive skill increases, particularly in the south Pacific. Annually averaged data are also used, although the time-series are too short to assess the variability. Including a linear trend as part of the signal results in some enhanced predictability.