The bias correction scheme used in the ECMWF ocean reanalyses system: the good and the no-so-good

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Abstract

The bias correction scheme used in the ECMWF ocean reanalysis system is presented. The model for the time evolution of the bias consists of two terms: a seasonal correction estimated a-priori, and an adaptive correction estimated as an autoregressive model. The later estimated from the assimilation increments, and it is applied to the temperature, salinity and pressure gradient terms. Sensitivities of the solution to different aspects of the bias parameters will be presented. Results show that the bias correction is overall beneficial, but it has shortcomings that should be addressed. Some future directions for further development will be discussed.