Geophysical Research Abstracts
Vol. 17, EGU2015-6635, 2015
EGU General Assembly 2015

Accuracy of sea level predictions with lead time of one week: a comparison between Prognocean and MyOcean

Malgorzata Swierczynska, Bartlomiej Mizinski, and Tomasz Niedzielski
University of Wroclaw, Wroclaw, Poland (tomasz.niedzielski@uni.wroc.pl)

There exist several systems which produce sea level forecasts in real time, with lead times ranging from hours to two weeks in the future. One of the recently developed solutions is Prognocean, the system that has been built and implemented at the University of Wroclaw, Poland. Its main feature is that it uses simple time series models to predict sea level anomaly maps, and does it for lead times ranging from 1 to 14 days with daily update. The empirical data-based models are fitted in real time both to individual grids (polynomial-harmonic model, polynomial-harmonic model combined with autoregressive model, polynomial-harmonic model combined with threshold autoregressive model) and to numerous grids forming a spatial latitude x longitude window of 3° x 5° (polynomial-harmonic model combined with multivariate autoregressive model). Although their simplicity, the approaches have already been shown to produce sea level anomaly predictions of reasonable accuracy. However, none of the analyses targeted at the comparative study which would present the skills of the Prognocean system against a background of the performance of other systems that use physically-based models. This study aims to fill this gap by comparing Prognocean-based predictions for one week into the future with the corresponding prognoses calculated by MyOcean. The reader is provided with the objectively-calculated set of statistics, presented as maps, which describes prediction errors (mean absolute error, root mean square error, index of agreement) and prediction skills (prediction efficiency, coefficient of determination) of the two systems. The exercise enables to compare the skills of the approaches, and the gridwise comparison allows one to identify areas of superior performance of each system.