RECONSTRUCTION OF INCOMPLETE SATELLITE IMAGES IN THE ADRIATIC SEA. STUDY OF AN UPWELLING IN THE ALBANIAN COAST

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Clouds in satellite images are a common problem. When working with these data it is often desirable, if not necessary, to have complete fields. A method for the reconstruction of missing data in large data sets (Beckers and Rixen, 2003; Alvera-Azcárate et al., 2004) is presented. The method, called DINEOF (Data INterpolating Empirical Orthogonal Functions), calculates the missing data from an optimal number of EOFs determined by cross-validation. A Lanczos method has been used for the EOF decomposition, in order to work with large matrices. In this work we present the reconstruction of a cloudy set of AVHRR SST satellite images of the Adriatic Sea. The results obtained are robust, as can be seen when comparing them to in situ observations [CTD profiles from MEDAR/Medatlas database (Medar Group, 2002)]. The results of the reconstruction are analysed, in particular a cold water event in the Albanian coast. This kind of event can be due to the action of winds, namely the Bora wind. Temporal EOFs and surface winds from ECMWF 40 years reanalysis are used to study this event.

References

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