

Forecast quality of the mediterranean cyclones: a numerical index

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The weather in the Mediterranean sometimes is related to the presence of mesoscale cyclones that, from time to time, produce severe weather events. The assessing of the quality of the forecast of these cyclonic structures must be a significant advance for better knowing the goodness of the weather forecast in this region, and particularly, the quality of the high impact phenomena prediction.

In order to estimate the cyclone forecast uncertainty in operational models, in this work two cyclone databases, one from the operational analyses of the T799 ECMWF deterministic model and another one from the forecasts provided by the same model in three ranges, H+12, H+24 and H+48, have been compared. The skill of the model to detect mesoscale cyclones and the accuracy in describing their features are assessed.

An index is presented as an indicator of the quality of the prediction, derived from the frequency distribution of errors in the prediction of four characteristics of the cyclone: position, central pressure value, geostrophic circulation and domain. Some sub-indexes are derived to verify separately each of the variables in order to analyze the most frequent sources of error. Other sub-indexes are also defined to indicate possible biases in the numerical prediction model.