Yellow Sea Reanalysis

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Using the method of dynamical downscaling, the coarse grid-global reanalysis ERA-I is complemented with regional detail on a grid with a resolution of about 7 km. A mostly homogeneous data set has been constructed, with 1-hourly data for the period 1979 – 2013 over the Bohai and Yellow Sea Region.

The data set has been validated against observations, and found satisfactorily reproducing the large scale atmospheric states given by ERA-I. It is also found to provide added value compared to ERA-I in coastal and mountainous regions. The representation of dynamical features such as vortex streets, wind fields in typhoons are improved, even if typhoons are still too weak. The data set may be used for describing storm surges, wave conditions and other aspects of regional oceanography when processed in dynamical models of the Yellow Sea. A first application has dealt with wind power for off-shore wind energy.

Also a comparison of another similar product, from OUC, is discussed.

基于动力降尺度的方法，我们利用粗分辨率全球大气再分析数据 ERA-Interim （ERA-I），构建了具有区域详情的 7 km 高分辨率气候数据集。该数据集均一稳定，逐时输出，时间跨度为 1979 - 2013，覆盖渤黄海区域。

通过与观测数据的对比验证，我们发现该数据集可以很好的重建 ERA-I 大尺度大气状态，同时在海岸带及山地区域相对 ERA-I 有较明显提高（“增值”）。此外，它能够更好的反映若干大气动力过程的特征，例如大气涡街，台风风场（虽然模拟台风强度仍小于观测值）等。该气候数据集可以用来驱动渤黄海区域海洋动力模式，以刻画风暴潮、波浪条件以及其他区域海洋气候条件。利用此数据集，我们对渤黄海区域近海风能的气候态及年代际变化特性进行了分析。

此外，我们将该数据集与另一相似数据集（中国海洋大学）进行了比较分析。