

Abstract for CLIVAR OSM, Qingdao, September 2016

Towards downscaling small scale coastal dynamics

Hans von Storch and Zhang Meng 张萌
Institute of Coastal Research
Helmholtz Center Geesthacht, Germany

Temporal developments and changes of small scale coastal dynamics are commonly not well described by observational data sets or climate change simulations. On the other hand, such changes may be of particular interest for planning measures to deal with such changes. We suggest to apply the "empirical downscaling"-concept for consistent specifying of such changes. This needs building links between large-scale states and small-scale statistics. For doing so suitable data sets are needed, which are homogeneous in space and time, and extend across several decades or more.

We have examined the simulation STORM with the 0.1 grid resolution ocean GCM MPI-OM forced with NCEP atmospheric re-analyses; by comparing the variability of sea surface height from the simulation with satellite data and an ocean reanalysis, we found a good similarity between the different data sets. We conclude that STORM is suitable for developing empirical downscaling models. Using this data set we have derived first such empirical cross-scale links dealing with coastal upwelling in the South China Sea.