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Earth and Environmental Sciences for Future Generations

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Abstract overview

Category	IAPSO (Physical Oceanology)
Symposium	P01 General Topics on the Physical Science of the Oceans
Presentation preference	Oral
Abstract title	Towards downscaling changes of oceanic dynamics
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The concept of downscaling, according to which smaller scale dynamics may be described as being “conditioned” by the state of larger scale dynamics plus small scale physiographic details, has become very successful in applications dealing with specifying (distributions of) atmospheric (impact) states. A large variety of statistical models and weather generators have been designed; regional atmospheric models as well as large-scale constrained global models have been constructed to this end.

We suggest using this concept also for regional and local oceanographic applications. The concept needs a modification, as not only regional physiographic details but also regional atmospheric forcing plays a major role. In first “fishing expeditions”, we screen high-resolution global ocean simulations forced with NCEP atmospheric re-analyses as well as oceanic-reanalysis, to what extent known large-scale features, such as the Kuroshio conditions local current systems in Chinese marginal oceans.

The second task will be to determine to what extent large-scales state variability is consensually described in oceanic re-analyses – this allows the determination of suitable large-scale predictors in empirical and dynamical downscaling exercises for the recent past.

Please feel free to contact us with any questions

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