

How to obtain ocean turbulent dynamics at super resolution from optimal multiresolution analysis and multiplicative cascade?

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A fundamental challenge in oceanography is the synoptic determination of ocean circulation using the data acquired from space, with a coherent depiction of its turbulent characteristics. This determination has the potential of revealing all aspects of the ocean dynamic variability on a wide range of spatio-temporal scales and will enhance our understanding of ocean–atmosphere exchanges at super resolution, as required in the present context of climate change. A method to obtain ocean dynamics products at different super resolutions is presented here, using an approximation of the energy cascade, expressed in a microcanonical formulation, and associated to turbulent signals provided by different products of Sea Surface Temperature (SST). The basic idea is to propagate across the scales motion information at lower resolution coming from GEKCO product [Sudre et al., 2013] in a multiresolution analysis computed on adimensional critical transition informations [Sudre et al., 2015].

REFERENCES

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