

Abstract Submitted
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Enhancement for long term integration results of one-way nested regional ocean model by employing boundary small eddy additions technique¹ JIN HWAN HWANG, PHAM VAN SY, Seoul National University — Generating small-scales structures during dynamical downscaling using the nested regional oceanographic models have been studied by the numerous studies. Those studies generated fine-scales feature in the nested regional circulation model with the large scale information at the lateral boundary incorporating with the local forcing. Recent studies however, found that the small-scales motions are under-developed seriously by downscaling work and such errors in the small scales can be transferred to the larger scales by inverse cascading and this could lead degrading the whole scale motions. This mainly limits the jump ratio of resolutions to small requesting the higher cost for downscaling. From that point of view, this work proposed an efficient technique, named boundary small eddy additions (BSEA) to enhance the quality of simulation and allow the higher jump ratio of the down scaling. The BSEA adds artificially the small-scale motions to the boundaries of a nested model based the spectral information of large-scale and can greatly improve the quality of the reproduction, even at much higher spatial resolution difference between the driving and the nested models.

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