



Air-sea interaction around an island

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In today's simulations of the ocean dynamics, the atmospheric forcing fields are usually too coarse to include the presence of smaller islands. The air-sea interaction around an idealized island is studied, using two superposed fine resolution shallow-water models, one for the atmosphere and one for the ocean. The island is represented in the atmospheric layer by a tenfold increased drag coefficient, leading to an atmospheric vorticity generation in the vicinity and the wake of the island. The influence of the atmospheric vorticity on the ocean vorticity, upwelling, turbulence and energy transfer is considered by performing fully coupled simulations of the atmosphere-ocean dynamics. The results are compared to simulations with a constant atmospheric forcing and simulations with one-way coupling only (where the ocean velocity has no influence on the atmosphere).