



What have we learned from the German consortium project STORM aiming at high-resolution climate simulations?

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The German consortium STORM was built to explore high-resolution climate simulations using the high-performance computer stored at the German Climate Computer Center (DKRZ). One of the primary goals is to quantify the effect of unresolved (and parametrized) processes on climate sensitivity. We use ECHAM6/MPIOM, the coupled atmosphere-ocean model developed at the Max-Planck Institute for Meteorology. The resolution is T255L95 for the atmosphere and 1/10 degree and 80 vertical levels for the ocean. We discuss results of stand-alone runs, i.e. the ocean-only simulation driven by the NCEP/NCAR reanalysis and the atmosphere-only AMIP-type of simulation. Increasing resolution leads to a redistribution of biases, even though some improvements, both in the atmosphere and in the ocean, can clearly be attributed to the increase in resolution. We represent also new insights on ocean meso-scale eddies, in particular their effects on the ocean's energetics. Finally, we discuss the status and problems of the coupled high-resolution runs.