



Exploring factors controlling ocean heat and freshwater uptake using a perturbed physics ensemble

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In this talk we investigate the diagnostics of ocean heat and salinity for different ocean basins recovered from a large coupled perturbed physics ensemble and compare with other AOGCMs and observations. The climateprediction.net distributed computing experiment is the first coupled perturbed physics ensemble in which the ocean is varied. The model used in the ensemble is the UK Met Office climate model HadCM3L. The diagnostics are used to evaluate the realism of historical transient responses of different model oceans, compared with the variability of observed heat content derived from the World Ocean Atlas 2001 data. An assessment is made of the relative importance of atmospheric and oceanic physical parameters in controlling ocean heat and freshwater uptake.