Simulations of the Meridional Overturning Circulation using the parallel cubic ocean model (PCOM): The spin-up phase.

[1,2]Sovara, M.V., [1,3]Engrlbrecht, F.E., [1]Reason, C.J.C., [4]Deshayes J., [5]Hermes J.C

1. CSIR Natural Resources and the Environment – Climate Studies, Modelling and Environmental Health, Pretoria, 0001, South Africa.
2. Department of Oceanography, University of Cape Town, Cape Town, Rondebosch, 7700, South Africa
3. Department of Environmental Sciences and Management, North West University, South Africa.
4. Centre National de la Recherche Scientifique, 3 Rue Michel-Ange, 75016 Paris, France.
5. South African Environmental Observation Network, Egagasini Node, Foreshore, Cape Town, 8012, South Africa.

Abstract —This paper describes the implementation at the Centre for High Performance Computing of an ocean general circulation model (OGCM) formulated on a non-orthogonal quasi-homogeneous cubic grid, for the purpose of studying decadal variability of the Meridional Overturning Circulation (MOC) and related fields. The first 10-year simulation obtained with the model is presented, and it is demonstrated that the ocean spin-up process produces plausible results.