2008 Western Pacific Geophysics Meeting
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modelling physical processes driving larval

HR: 1800h
AN: **OS25E-12**
TI: Modelling Physical Processes Driving Larval Transport in Reef Systems
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AB: Larval transport is mediated by circulation patterns; large scale geostrophic currents can advect larvae for hundreds of kilometres. However, the interaction of currents with the complex reef bathymetry provokes local scale circulation features that enhance larval retention. We first simulate larval transport at reef scales under different simplified circulation scenarios, (i.e. along reef constant flow, across reef tidal flow) and different idealized reef shapes (i.e square, rectangular) to quantify larval abundance and test approximations of larval retention around reefs as a function of reef geometry and circulation regimes. In order to further test the developed approximations with realistic currents we chose to model circulation along the Great Barrier Reef (GBR) using the Sparse Hydrodynamic Ocean Code (SHOC). So far we modelled circulation for the summer period of 2005-2006 forcing the model with wind, heat fluxes, low frequency surface elevation and tides. The model successfully reproduces the main hydrodynamics of the region as shown by comparison with Sea Surface Temperature satellite images and observed temperature time series.
DE: 4220 Coral reef systems (4916)
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