Geophysical Research Abstracts
Vol. 12, EGU2010-14945, 2010
EGU General Assembly 2010

Energetics of baroclinic waves in aquaplanet simulations

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A set of simulations performed with an aquaplanet version of the ECHAM5 GCM is used to investigate the energetics of the atmospheric system. The mean state of the system is characterised by a zonally symmetric jet centred around 35 degrees along which baroclinic eddies develop. In this simplified framework the spectral properties of the meridional heat transport and the eddy available to eddy kinetic energy conversion are shown and tested against normal modes theories of baroclinic instability. The analysis is shown to give new insight on the process of destabilisation of almost stable baroclinic waves, as the degree of baroclinicity of the system is increased.