Geophysical Research Abstracts,
Vol. 11, EGU2009-5323, 2009
EGU General Assembly 2009

Improvement of the Diurnal Cycle simulation in ICTP RegCM3

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This study investigates the performance of the regional climate model ICTP RegCM3 to simulate the diurnal cycle of surface air temperature over Europe. Two methods were used to improve the model capability, one is using a quasi-triangular function (instead of a linear) relationship to represent the time direction evolution of the lateral boundary conditions, the other is adding the appropriate magnitude of diurnal cycle of Sea Surface Temperature as the lower boundary condition. The preliminary results show that the local time of the maximum/minimum air temperature at 2 meters and ground temperature could be simulated reasonably and the model bias was also reduced after using these two methods.