



Modelling Climate Change in Ireland: the C4I Project

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Many model studies have shown improvements in climate simulations resulting from enhanced resolution. Maximum resolution can be achieved by means of a Regional Climate Model (RCM). The C4I (Community Climate Change Consortium for Ireland) Project team have implemented such an RCM to investigate future climate change over the geographic region surrounding Ireland. The RCM chosen is the Rossby Centre Regional Atmospheric Model (RCA), developed from the High Resolution Limited Area Model (HIRLAM).

To evaluate the accuracy of the model, the climate for the time-period 1961-2000 has been simulated. The results from the RCM were compared to observational data and to re-analysed fields obtained from ECMWF (ERA-40), and the model was found to simulate the atmospheric evolution with a high level of accuracy. Simulations of future climate were then done using boundary data from the MPI global climate model (ECHAM). Analysis of the results is yielding guidance on probable changes in climate due to enhanced green house gases and other effects. In particular, changes in the occurrence of extreme weather events is under analysis, and results of this will be presented.