

Changes in precipitation over Ireland in the CMIP3 climate model database

Question: What do climate models say about future rainfall in Ireland in a global warming scenario?

In a future, warmer climate, Ireland is expected to get rainier in winter and drier in summer. You will examine the robustness of these predictions across different climate models in the CMIP3 database. You will also examine changes in extremes.

- Background study:
 - Key concepts and tools: Climate models, performance index, CMIP3 project, global warming scenarios, extreme events, python language, NetCDF data format.
- Data analysis:
 - You will compare the 20th century simulations with the SRES1AB scenario. Precipitation data for these runs is available on augie.ucd.ie.
 - For each model, season and case, compute:
 - Mean precip.
 - Max daily precip
 - Max number of days with no rain
 - Plot and discuss results. Do all models give the same qualitative results? What about the subset of models with the highest performance indices?
- Prepare report, including introduction to the problem, review of previous studies, description of datasets and methods, presentation and discussion of data analysis results, conclusions.
- Prepare 10 minute oral presentation summarizing the topic and the work you have done.