

Experiments to simulate Climate Change: EdGCM

Climate change is a topic of great importance. It is clear that, if CO₂ levels continue to rise, changes in the climate are inevitable. The best means we have of anticipating these changes is to use Earth System Models. A model, EdGCM, is available and can be used to carry out a series of numerical experiments to evaluate the likely changes in climate under various scenarios.

Tasks to be undertaken:

- Study the documentation available on EdGCM
- Study the summary material from the IPCC AR4 Reports.
- Download and install the EdGCM model from <http://edgcm.columbia.edu/>
- Familiarize yourself with the components of the model system
- Design a set of numerical experiments to investigate the sensitivity of the climate under a range of scenarios:
 - o Sensitivity to CO₂ level
 - o Response to changes in solar outputs
 - o Role of orbital parameters in paleo-climate
 - o Etc.
- Summarize your findings in a report.

