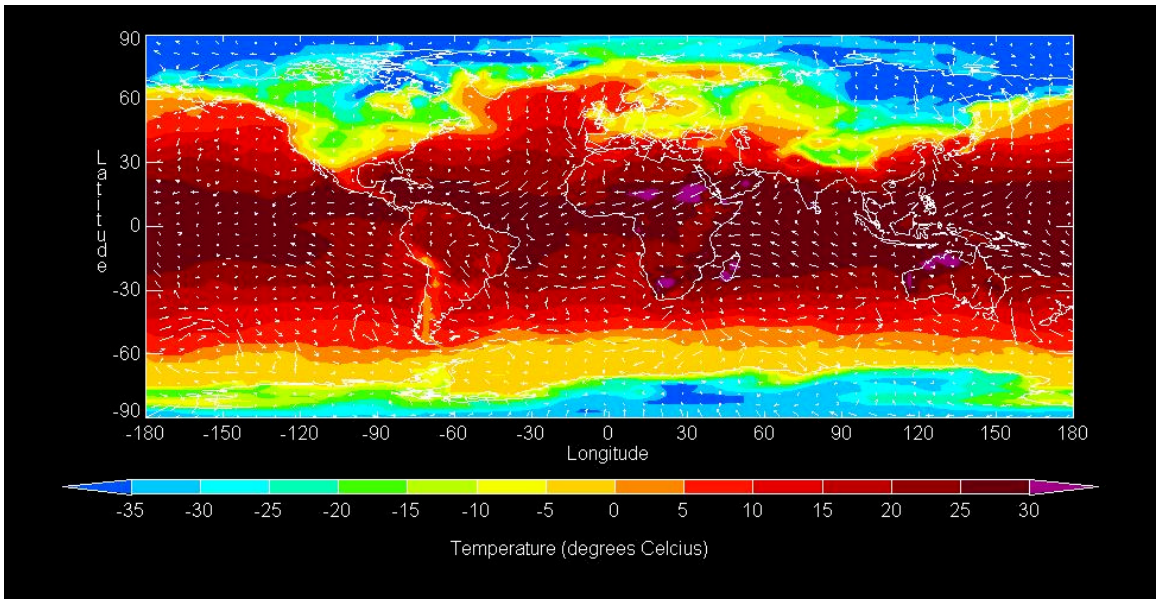
climate*prediction*.net

by Bob Spicer, Martin Dzbor

Screen savers, which could help save the planet, will be given away world-wide as part of a massive climate prediction research project being launched by the OU's Earth Sciences department and Knowledge Media Institute in partnership with the Met Office, Rutherford-Appleton Laboratories and Oxford and Reading universities.



The partners have won a £400,000 grant from the Natural Environment Research Council's e-Science initiative and further £350,000 from Oxford e-Science Centre to test and improve the leading climate prediction model, using hundreds of thousands of personal computers.

Professor Bob Spicer of Earth Sciences explained: "With climate there are so many variables involved we need to run the models over and over again, slightly varying the starting conditions each time, and seeing what the spread of results is at the end."

The models simulate the changes occurring in the Earth's atmosphere and oceans every few hours, and because so much data is involved they are usually run on supercomputers taking up a lot of computer time and financial resources. By turning the most advanced one, the Hadley Centre model, into a screensaver, climate*prediction*.net researchers hope to harness PC power by persuading hundreds of thousands of people to run it on their desktop machines without interfering with their normal day's work.

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"We will give the Hadley Centre model free to individuals, schools, universities, OU students and anyone who wants to take part, and ask them to run it for a specific set of conditions which we will supply. On average it may take up to six months to run one such model. The results will be sent back to us and we will build an enormous database with petabytes – a billion megabytes – of data generated by the aggregated model runs. This database will then be 'mined' to search for shortcomings and anomalies in the model. "

"From the climatology research point of view it is about making the model better, and making the climate predictions more reliable," said Bob. However, there are enormous opportunities also in the area of advanced web and communication technologies.

Part of the OU's unique contribution to the project will be to support and sustain a user-friendly and smart web-community environment. To this end, the project draws on the OU's Knowledge Media Institute and their leading edge skills and technologies in this area. According to KMi director Enrico Motta, "particular attention will be focused on supporting the interpretation, sharing and comparative analysis of data generated from the large-scale distributed experiment. Our challenge is to foster learning and improve public understanding of the climate science in co-operation with the members of a large community."

Supporting material, including packs for schools with material relevant to the National Curriculum and a new OU short course drawing on the main experiment are being prepared. This course would be offered as a Level-1 taster, and it will use the latest advances in the Semantic Web and smart navigation technologies to make the topic accessible to a wider target audience. "This will be real science, being done by our students," says the climate*prediction*.net team.

The project is currently in the beta testing stage, and the models shall be available for public use later this year. For more information visit http://www.climateprediction.net, and express your interest to participate in the experiment. If you're planning to install the screensaver on a work PC, please get permission from your employer first. Also, the climate*prediction*.net team that consists of Bob Spicer and Elaine McPherson (Earth Sciences), Enrico Motta, John Domingue, Marc Eisenstadt and Martin Dzbor (KMi) will keep you up to date on their website http://kmi.open.ac.uk/projects/climateprediction.net.