Geophysical Research Abstracts,
Vol. 11, EGU2009-8220, 2009
EGU General Assembly 2009
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The EU 2° target and the new ENSEMBLES scenario: First results

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In the EU FP6 project ENSEMBLES a new scenario was developed to test whether the 2° target the EU aims at can still be reached from the present point of atmospheric greenhouse gas (GHG) concentrations, or not. Based on the A1B scenario, a new scenario was developed that contains a peak of the GHG concentration in the middle of the current century and declines towards 450 ppm CO2-equivalent at the end of the 21st century. The new scenario is called E1 or A1B_450.
A comparison of the results of 5 different AO-GCMs for the E1 scenario will be shown. For all models the temperature response with respect to pre-industrial conditions (1860-1890) is much smaller than for the original A1B scenario. In most models the global mean temperature change stays below 2°C in the E1 scenario. However, this is not true for all models. Two models (HadGEM2, IPSL) show warming between 2 and 3°C at the end of the 21st century. But again, the warming is much smaller than the warming in the A1B scenario when simulated with the same models.
For the middle of the century, when the GHG concentration peaks (2040-2059), the models show a change in the warming rate: most models show a slower warming during the second half of the century, some models show nearly constant temperature after the peak period, and two models (EGMAM, CNRM) show a slight cooling after the peak.
Precipitation signals are in general less pronounced than in the A1B scenario. However, a comprehensive analysis is not yet available.