

**Article on climate sensitivity extremes in the 26 October 2007 edition of *Science*.
See summary below.**

Inherent Climate Uncertainty

Despite notable increases in observational data, computing power, and the number of scientists studying the problem, uncertainties in projections of future climate change have not lessened substantially over the past 30 years. In a Report in the 26 Oct 2007, Roe and Baker explain why. The reason has to do with climate sensitivity -- the change in global average temperature that would result from sustained doubling of atmospheric carbon dioxide over its preindustrial value. Past work has shown that while the most likely value of climate sensitivity is between 2.0 and 4.5 degrees Celsius, there is a small probability that the increase could be much higher (8 degrees C or higher). The authors used feedback analysis to show that this tail of low probability is an intrinsic feature of the climate system rather than a consequence of inadequate data or models. They further assert that improvements in our understanding of the physical processes that underlie climate, and in the estimation of their effects from observations, will not yield large reductions in the so-called envelope of climate sensitivity. An accompanying Perspective by M. R. Allen and D. J. Frame discussed the practical implications of these findings.