Ice Sheet Dynamics SEJ Summary

The dynamics of ice sheets in Greenland and Antarctica are an important problem in quantifying the effects of climate change. Current physical models are poorly constrained and are unable to retrodict dramatic changes in the geological record. For this reason structured expert judgment studies of ice dynamics were undertaken in 2010 and 2012. The goal was to quantify uncertainty in contributions to sea level rise due to ice sheet melting. The first study involved European experts while the second enlisted US and European experts. These two studies afford the possibility to compare the evolution of scientific uncertainty for this important problem. While uncertainty in the 20th century contributions diminished between 2010 and 2012, the uncertainty in the 21rst century contributions actually increased. Performance based combinations of uncertainty out performed equal weight and expert self-assessments in terms of statistical accuracy and informativeness. This work has been frequently cited and has generated discussions on new approaches to uncertainty quantification in the climate arena.

Literature

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