



What can we learn about the dynamics of DO-events from studying the high resolution ice core records?

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The causes for and possible predictions of rapid climate changes are poorly understood. The most pronounced changes observed, beside the glacial terminations, are the Dansgaard-Oeschger events. Present day general circulation climate models simulating glacial conditions are not capable of reproducing these rapid shifts. It is thus not known if they are due to bifurcations in the structural stability of the climate or if they are induced by stochastic fluctuations. By analyzing a high resolution ice core record we exclude the bifurcation scenario, which strongly suggests that they are noise induced and thus have very limited predictability.

Ref:

Peter Ditlevsen, "Tipping points in the climate system", in *Nonlinear and Stochastic Climate Dynamics*, Cambridge University Press (C. Franzke and T. O'Kane, eds.) (2016)

P. D. Ditlevsen and S. Johnsen, "Tipping points: Early warning and wishful thinking", *Geophys. Res. Lett.*, 37, L19703, 2010