



An energetic view of millennial climate variability

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Millennial-scale climate variability, and the associated Dansgaard-Oeschger events, remain enigmatic features of Earth's history, despite decades study. High-resolution and well-dated paleoclimate records together with modeling have revealed the impact of these events on different aspects of the climate system during the last glacial period.

Recent studies have focused on identifying the phasing of changes in relative temperature across the globe, or other features of the climate such as the location of storm tracks. While determining the timing of event is essential, understanding and testing hypothesis about the physical processes behind this variability will benefit from putting these changes in context of a common currency. Unlike temperature and other climate variables, energy is conserved within the climate system. We here take an energetic perspective on millennial climate variability using recently synchronized high-resolution paleoclimate records with simple proxy and energy balance models. This view can help quantify the roles of changes in ocean and atmospheric heat convergence, as well as additional factors such as changes in greenhouse gases.