



Ups and downs of Quaternary climate

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The Quaternary is perhaps the most intensely studied period of climate history. This is in large part due to the wide array of paleoclimate archives available which offer unparalleled insight into the intricacies of Earth's climate system. A wealth of records obtained from ice sheets, marine sediments, speleothems and other deposits have documented processes across a range of timescales from decades to hundreds of thousands of years. In this presentation I will discuss three modes of Quaternary climate variability: millennial-scale transitions including Dansgaard-Oeschger (D-O) events and so-called abrupt climate change, orbital timescale glacial-interglacial variations and the longer term Mid-Pleistocene Transition (MPT). I will describe some of the mechanisms thought to underlie D-O variability and its global manifestation. I will also discuss the interplay between millennial-scale activity and the transitions between glacial and interglacial conditions. Finally I will present the latest results from an ongoing project to produce a continuous marine record of millennial-scale variability spanning the last 1.7Myr. The records produced so far highlight the pervasive nature of abrupt climate change during the late Pleistocene and provide unexpected insight into changes underlying the MPT.