Geophysical Research Abstracts, Vol. 9, 07306, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-07306

Speleothem evidence for a widespread climatic anomaly at around 9.200 years before present

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Approximately 8.47 $\pm$ 0.3 ky ago, 163,000 km^3 of freshwater was released from glacial Lakes Agassiz and Ojibway into the North Atlantic, triggering sudden and widespread cooling in the North Atlantic region. Temperatures decreased by 1.5 to 3^{o}C in Europe and North America and, further afield, the hydrological cycle in the Northern Hemisphere tropics weakened considerably. Marine sediments and climate model simulations reveal that this climatic anomaly termed the "8.2 ky event" was triggered by a slowdown of the North Atlantic thermohaline circulation by $\sim$50% in response to a meltwater-induced freshening of the North Atlantic. The meltwater pulse (MWP) responsible for the 8.2 ky event is the final one in a series of at least 14 similar events documented for the early Holocene, but the possible climatic impacts of these smaller outbursts are not well documented. Based on data from our own speleothem records from southern Arabia and an ensemble of recently published and revised paleoclimate records we provide evidence for a notable widespread climatic anomaly at around 9.2 ky B.P. We suggest that this event also resulted from a MWP, but one of much smaller magnitude, only 5% of that which resulted in the 8.2 ky event. Because the magnitude and climatic anomaly pattern associated with the 9.2 ky event is nearly identical to that associated with the 8.2 ky event, our results suggest that early Holocene climate was much more sensitive to fresh water forcing than previously thought.