

Global climate evolution during the last deglaciation

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Deciphering the evolution of global climate from the end of the Last Glacial Maximum approximately 19 ka to the early Holocene 11 ka presents an outstanding opportunity for understanding the transient response of Earth's climate system to external and internal forcings. During this interval of global warming, the decay of ice sheets caused global mean sea level to rise by approximately 80 m; terrestrial and marine ecosystems experienced large disturbances and range shifts; perturbations to the carbon cycle resulted in a net release of the greenhouse gases CO₂ and CH₄ to the atmosphere; and changes in atmosphere and ocean circulation affected the global distribution and fluxes of water and heat. Here we summarize a major effort by the paleoclimate research community to characterize these changes through the development of well-dated, high-resolution records of the

deep and intermediate ocean as well as surface climate. Our synthesis indicates that the super-position of two modes explains