



CICLO DI SEMINARI

Martedì 29 Settembre 2015

Sala riunioni terzo piano - ore 14:30
Via Gobetti 101, Bologna

ATLANTIC OCEAN CIRCULATION AND ABRUPT CLIMATE CHANGE DURING THE LAST ICE AGE AND DEGLACIATION

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The last ice age and subsequent deglaciation were characterized by dramatic climate oscillations with millennial timescales and more rapid transitions. These climate changes were asynchronous in the northern and southern hemisphere, and are not easily explained by variations in solar output, atmospheric greenhouse gas concentrations, or the slowly varying distribution of seasonal sunlight that helps account for the occurrence of global glaciations. Instead, the pattern of hemispheric changes suggests the repeated redistribution of heat by dynamic components of the Earth system. The deep ocean's large-scale circulation, in particular the Atlantic meridional overturning circulation (AMOC), is a likely candidate for this role. In this study, we have generated detailed geochemical and isotopic evidence from deep-sea sediment cores, including a new long core from the deep subtropical Atlantic. The data reveal that AMOC variations accompanied and preceded the millennial changes in the northern hemisphere, which in turn led those occurring in the south, thus confirming the long-suspected link between ocean circulation and abrupt climate change.