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Short-term variability of surface-water characteristics in the Late Neogene North Atlantic Ocean: Preliminary results of a biomarker record from Site U1313

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Overall goal of our study on material of IODP Site 1313 (Leg 306) is a high-resolution reconstruction of short-term variability in sea-surface temperature and productivity in the late Neogene North Atlantic Ocean and its relationship to environmental change (e.g. ice sheet instabilities), using organic-geochemical (biomarker) proxies. Determination of the long-term evolution of millennial-scale variability in surface characteristics can provide clues to the mechanisms responsible for abrupt climate change, which are still poorly understood in detail. Preliminary results show alkenone based SST's at Site 1313 varying between 7 and 21 ^{o}C during the time interval between MIS 9 and 16 (0.5 kyr resolution). During MIS 10, 12, 14, 15 and 16, distinct maxima in alkenones (interpreted as proxy for primary production) coincide with minima in SST's. These results are the first of a high-resolution record that will span the period from 0-7 Ma. It will be the first long-term high-resolution alkenone based SST and productivity record that will extend back to the late Miocene, the period before the development of large-scale Northern Hemisphere ice-sheets.