



The Holocene alkenone SST record from Feni Drift (NE atlantic ocean) at 18 yr resolution

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A high resolution sediment core from Feni Drift (ENAM9606, 55°39'N 13°59'W, 2543 m water depth) was investigated for alkenone sea surface temperatures (SST) during the last 10,000 years. The core has an average sedimentation rate of 30 cm/1000 years and was studied at a depth resolution of 0.5 cm, providing a time resolved record of 18 years. Age calibration was done with ^{14}C AMS dates in the piston and the box core. The latter was also aged with ^{210}Pb . Core top SST is 12.4°C. This value agrees quite well with the annual average top water column SST measurements, 12.6°C, recorded by NOAA-CIRES at the same site.

SST along the Holocene exhibits a general decreasing trend between 14°C (10000 yr B.P.) to 12.4°C (present time). In terms of long-term SST changes, the core exhibits a period stability between 10000 yr and 7500 yr at 13.5°C. Then, there is a decrease of SST from 7500-7000 yrs BP to 5500 yrs BP involving a decrease of 1°C. Between 5500 yr and 1800 yr BP there is a period of stability involving an increase of 0.1°C that is followed by another SST drop to 12.1°C at 680 yr BP. Between this date and present SST exhibits a constant values varying between 12.1°C and 12.4°C. An abrupt SST drop involving 1°C (from 12.3°C to 11.3°C) is observed in this period (220 to 160 yr BP, minimum at 180 yr BP). Another abrupt drop involving a decrease of 0.6°C (from 12.3°C to 11.7°C and back to 12.4°C) is observed between 1970 and 2000 AD with minimal values at 1990.