



Late Neogene age model and sedimentation history at the southern Gardar Drift (IODP Site U1314) derived from non-destructive core logging measurements

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During IODP Expedition 306 Site U1314 was drilled on the southern Gardar Drift in a water depth of 2800 m. The completely recovered Upper Pliocene to Holocene sedimentary sequence will allow a high resolution monitoring of North Atlantic Deep Water (NADW) variability during the last ~2.7 m.y. Furthermore the site lies close enough to the IRD belt to record the Heinrich-type detrital layers that indicate ice sheet instability. The sediments at Site U1314 consist of an alternation of predominantly nanofossil oozes and terrigenous silty clays. These changes in lithology are reflected in prominent short-wavelength amplitude variations of the sediment physical properties. The physical property records from Site U1314 exhibit a high similarity with equivalent data from Site 983 (ODP Leg 162, northern Gardar Drift) for which an oxygen isotope based stratigraphy is already available. Thus correlating colour and magnetic susceptibility variations from both sites allowed us to derive an age model for the last 2 m.y. at Site U1314. We also present new X-ray fluorescence (XRF) records of element intensities (Si, Al, Ca, Fe, Ti, Sr, Ba) obtained with a non-destructive XRF core scanner for the time interval 400 - 900 k.y. Given the average sedimentation rate of 7.6 cm/k.y. for this time interval the 1 cm resolution XRF records allow us to explore millennial scale changes in terrigenous provenance and biogenic productivity during the Mid Pleistocene Transition (MPT).