

# **ROCK MAGNETIC PROPERTIES OF A HOLOCENE LAMINATED SEQUENCE FROM THE GULF OF CALIFORNIA**

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Results of a rock magnetic study of laminated sediments from the Alfonso Basin, Bay of La Paz are used to investigate sediment sources and depositional environment in the southern Gulf of California during the Holocene. AMS radiocarbon dating on benthic foram shells provides stratigraphic control, with age for the core bottom sediments of 7597-7831 cal. yr B.P. Magnetic signal is dominated by fine-grained titanomagnetites, derived from the silicic volcanic units surrounding the Bay of La Paz. Magnetic mineralogy is relatively homogenous as seen in bulk magnetic properties of low-field susceptibility, remanent intensity and coercivity. Magnetic hysteresis loops show strong variable paramagnetic components; after paramagnetic correction loops show saturation at low fields and high saturation magnetization values. Plots of hysteresis parameter ratios for domain state show that samples group in the pseudo-single domain field, with mixtures of single and multi-domain particles. Magnetic susceptibility logs show relatively high frequency dependence factors, particularly for the Middle Holocene, suggesting increased contribution of fine-grained superparamagnetic minerals related to eolian deposition. Magnetic susceptibility exhibits an apparent cyclicity of roughly 1200-1500 yr. Paramagnetic slope correction parameter shows higher values between 30 cm and 40 cm depth, with an apparent cyclic variation along the core. The well-preserved laminated sequence indicates predominant anoxic conditions in the basin floor. Depositional environment had a dominant supply of pluvial detrital sediments and eolian fine-grained dust composed of siliciclastic volcanically-derived material with less abundant biogenic input.

Marine laminated sediments, Holocene, Gulf of California

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