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Origin of the remanence recording the Mono Lake Excursion in the Mono Basin, CA

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In the Mono Basin, CA, fine sand, silt, and volcanic ash deposited in Pleistocene Lake Russell is exposed on the margin of Mono Lake, the remnant of Lake Russell, and on Paoha Island in the lake. The silt records the Mono Lake Excursion (MLE)(Denham and Cox, 1971; Liddicoat and Coe, 1979) and several tens of thousands of years of palaeomagnetic secular variation (Denham and Cox, 1971; Liddicoat, 1976; Lund et al., 1988).
The palaeomagnetic directions and relative field intensity during the MLE are negative inclination (about -30) and westerly declination (about 290) during reduced intensity that are followed by steep positive inclination (about 85) and easterly declination (about 100) during high intensity at eight of 11 localities around the lake. The three exceptions are at wave-cut cliffs on the east side of the lake where the negative inclination and westerly declination are absent (Coe and Liddicoat, 1994). On Paoha Island, the entire excursion is recorded.
X-rays of the sediment and lineation measurements show patterns of normal bedding with layers aligned such that the minimum axes are within 5-10 degrees of normal bedding, with 10 percent foliation and 1 percent lineation (Coe and Liddicoat, 1994).
We explore reasons for the absence of part of the MLE at the wave-cut cliffs beyond the interpretation of Coe and Liddicoat (1994) that palaeomagnetic field strength is a controlling factor. Possibilities include the sedimentation rate – at localities on the margin of Mono Lake the rate is about 60 percent less than at the wave-cut cliffs – and lithology of the sediment. At Mill Creek on the northwest side of Mono Lake and about 15 kms from the wave-cut cliffs, the non-magnetic sediment fraction is coarser-grained than at the wave-cut cliffs by a factor of about two, and there is a similar difference in the total inorganic carbon percentage by weight for the two localities. The results of studies on sediment from two additional localities in the basin (Paoha Island and Warm Springs three kms north of the wave-cut cliffs) where the full MLE is recorded will be presented.