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An example of high-resolution stratigraphy in the PEAT cruise, Expedition 320/321 Hiroshi Nishi, Heiko Palik

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Over the 40 years since scientific ocean drilling first began, significant improvements have been made in both core recovery and correlation between cores from different holes at the same site. The primary design of PEAT cruise was planned to recover a continuous sequence in the equatorial Pacific in the Cenozoic, and assemble them into an equatorial Pacific megasplice covering the past 56 Ma. The sedimentary records were combined to a successive sequence using onboard measurements of LIMS (Laboratory Information Management System) database, and the results of biostratigraphy and magnetostratigraphy. Eight sites of two cruises from Sites U1331 to U1338 were drilled, and basement ages spanned from 52 to 18 Ma. The PEAT shipboard data can be used to create a high-resolution megasplice of equatorial Pacific sediments based on these data. Cross-calibration of magnetostratigraphy, biostratigraphy and orbital stratigraphy improve chronological estimates of sedimentation and ages of significant events. In particular, the magnetic susceptibility is useful for correlation of radiolarian events between PEAT Expeditions and previous ODP Leg 199. PEAT cruise represents a good example for high-resolution correlations in marine core studies.

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