Magnetostratigraphic chronology of Borehole HLL01, south coast of Laizhou Bay.

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Asian marginal seas have played an important role in modulating regional energy and material exchanges and in deriving climatic and environmental evolutions. As an effective method, magnetostratigraphy establishes reliable geochronological framework, which is critical for reconstructing long-term history of climatic and environmental changes in the past. Due to that the previous long-term records were mainly located in the west and north Bohai Sea, thus a new Borehole HLL01, drilled in the Laizhou Bay with a length 450 m, was studied. The main results are as follows: (1) The HLL01 magnetostratigraphy, containing 272 samples with reliable ChRMs and 10 normal and 9 reverse magnetozones, were identified. (2) Comparing with the ATNTS2012, the HLL01 magnetostratigraphy recorded C3An.2n to C1nchrons, and its bottom age was about 6.6 Ma. (3) Boundaries between the Miocene and Pliocene and between the Pliocene and Pleistocene were located at 340 m and 140 m depth, respectively. (4) Through comparison with the previous results from the west and north Bohai Sea, it is inferred that the period since the late Miocene around the Bohai Basin was predominated by thermal subsidence, but their environmental history in various subunits were different.

Keywords: Laizhou Bay; magnetostratigraphy; sediment; Pliocene; Pleistocene