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Preliminary Magnetostratigraphic Study of the Upper Cretaceous Dinosaur Site from La Barranca Los Bonites, Tiquicheo (Michoacan State, Southern Mexico)

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A magnetostratigraphic investigation has been conducted on Upper Cretaceous Los Bonites section near Tiquicheo in western Michoacan state. A total of 167 samples were collected from 57 sites through a 319-m-thick section that contains dinosaur fossil bones. The sequence was deposited on continental (fluvial environment) and it is characterized by a succession of conglomerate at the bottom followed by an alternated brown to grey, thin- to medium-bedded sandstones and siltstones, and some andesitic lava flows and limestone levels. Thermal demagnetization allowed separation of two remanence components, a present-day field component with low-unblocking temperatures and a characteristic component with unblocking temperatures up to 580–610 C. Rock magnetic experiments show that the remanence magnetization is mainly carried by magnetite and hematite. The overall mean paleomagnetic direction (incl. = 42.4º.and decl. 333.6º, k= 21 and α95 = 3.3) documents a counterclockwise vertical axis rotation of about 140 with respect to the expected Late Cretaceous direction derived from the North America polar wander curve (incl. = 50.6º, decl. = 347.8º). The age of this sequence according to the biochronology and a radiometric dating of 84 $\pm$ 2.8 Ma, is Late Cretaceous (Santonian). The magnetostratigraphic results from the dinosaur-bearing sedimentary-section can be correlated with the upper part of chron 34n.