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Archeointensity determinations on Pre-Columbian potteries from La Ceiba and Santa Marta shelter-caves (Chiapas, Mexico).

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Quite surprisingly, the abundance of archaeological baked clays found in the tropical area of Mesoamerica contrast with the small amount of archeomagnetic data available today for this area [Fanjat et al, EPSL, 2013; Alva-Valdivia et al, PEPI, 2010, Morales et al., EPS, 2009]. It seems especially difficult to try to establish a regional trend in the intensity variations. While they are few, the data are moreover of uneven quality as attested by a large scatter in experimental values during the Mesoamerican classic and post-classic periods (250-1521 AD) that cannot be explained by real fluctuations in the Earth's magnetic field [Fanjat et al, EPSL, 2013]. The present study is part of a large effort to provide reliable and perfectly dated archeointensity data for the tropical area of Mesoamerica. It focuses on Thellier-Thellier archeointensity measurements obtained from 87 small fragments from potsherds of 12 different potteries. These potteries were excavated from sedimentary sequences within two shelter-caves, La Ceiba and Santa Marta, located on the banks of Grijalva and La Venta rivers, respectively. Both are shelter-caves without constructed structures that were inhabited by humans groups. Samples were located in different stratigraphic levels, culturally well identified and well preserved due to long time sedimentation. Only samples with a homogenous color were pre-selected for the rock magnetic study performed prior to any attempt to estimate the archeointensity. This was done in order to assure, as far as possible, a uniform baking during the manufacture, which is supposed to be made in open sky fire, since no kiln construction has been found. The ceramics ages were achieved in 2 ways: for samples with organic material associated, a 14C dating was done. The rest of the samples were dated according to their typological characteristics, comparing with regional ceramic chronological classification. This includes characteristics such as the finishing surface type, decoration, polished type, color, clay characteristics, composition, baking types, form, and function. The ages of the selected samples enclose the entire classical and post-classical periods. Most of our selected samples yielded good, from a technical point of view, archeointensity estimates. These new archeointensity determinations are compared and discussed with the previous values obtained for this area.