NEW PALEOMAGNETIC AND AMS STUDY OF MAFIC SILLS FROM THE RIO BRANCO REGION - MT (SE OF AMAZONIAN CRATON)

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We present a paleomagnetic and AMS study on mafic sills cutting sedimentary rocks from the Rio Branco region, Mato Grosso state (Amazonian Craton). U-Pb (zircons) dating on a gabbro and a granophyre from the mafic-felsic Rio Branco Suite yielded ages of 1471 ± 8 Ma and 1427 ± 10 Ma, respectively. 108 samples from 11 sites were sampled, from which 3 sites are represented by sedimentary rocks collected close to three sills for a baked contact test. AMS measurements yielded planar fabric for analyzed rocks, which is expected for unmetamorphosed and undeformed sills and sedimentary rocks. After AF and thermal demagnetization southwestern, steep positive inclination characteristic remanent magnetization (ChRM) directions were isolated for the sills Dm=208.2°, Im=68.5° (n =8, A95=6.4°), which yielded the paleomagnetic pole at 46.4°S; 277.0°E (A95=10.2°). These directions are very close to those found previously on mafic sills in the same region. Consequently, a new mean direction was calculated encompassing 18 sites (Dm=197.4°, Im=62.9°, A95=5.7°) which defined the paleomagnetic pole at 56.0°S; 278.5°E (A95=7.9°). Magnetic mineralogy study indicates PSD-magnetite grains as the main magnetic carrier of ChRM directions. Although the baked contact test was not conclusive, paleomagnetic poles from other contemporary basic intrusions from the same region suggest that the Rio Branco sills' ChRM directions represent a thermoremanent magnetization (TRM) acquired during the emplacement, at about 1430 Ma.