

ROCK MAGNETIC PROPERTIES AND MICROSCOPY OF OPHIOLITES: NORTHEASTERN CUBAN REGION

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We sampled 19 sites (135 oriented cores) of ophiolites and volcanic rocks of Conacian-Turonian to Eocene age at the northeastern Cuba region. The main rocks are chalcalkaline gabbros (olivine and troctolite), and serpentinites that comes from peridotite serpentinization (e.g. dunite, harzburgite, wehrlite and lherzolite). Serpentinites have been deformed by mechanical processes (cataclasis), forming cataclastic breccias, supported by the presence of angular fragments of antigorite-serpofite, contained in a very fine size isotropic material. Gabbros contain: olivine, augite, diopside, hiperstene, bytownite, labradorite, apatite and zircon. Chromite and spinel anhedral crystals are disseminated in the whole rock, and titanomagnetite octahedral crystals with ilmenite lamellas trellis type are altered to titanomagnetite and pseudobrookite-rutile, respectively. Olivine is altered to iddingsite-antigorite-magnetite-hematite. Augite is altered to hornblende and hornblende to biotite, suggesting a possibly retrograde metamorphism. Serpentine are formed by antigorite, serpofite, and crysotile. Contain granular and cryptocrystalline quartz veins associated to magnetite altered to hematite, both showing trellis texture. Scarce anhedral crystals of titanomagnetite-titanohematite and chromite are disseminated.

AF demagnetization was better-quality than thermal demagnetization process showing mean unblocking temperature above 20 mT, excepting the gabbro that shows one to two magnetization components of mean unblocking temperature around 350°C. Characteristic remanent magnetization (ChRM) was defined in 102 samples, being magnetite and titanomagnetite the magnetic carriers in a pseudo-single-domain magnetic state. Strong viscous magnetizations appear between 10-30 mT and 500-550°C and are destroyed between 35-80 mT or 575°C, suggesting magnetite as the main carrier of remanence. 'Pot bellied' and 'wasp waisted' behavior curves of hysteresis experiments suggests ferromagnetic phases. Saturation magnetization and coercivity have, in general, medium to high values.

Rock magnetism, microscopy, ophiolites, Cuba

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