PRELIMINAR ANISOTROPY OF MAGNETIC SUSCEPTIBILITY STUDIES IN THE CONTACT BETWEEN ARROYO GRANDE FORMATION AND CARPINTERÍA GRANITE (PALEOPROTEROZOIC), ARROYO GRANDE BELT, PIEDRA ALTA TERRENE, URUGUAY: INFERENCES ABOUT DEFORMATION AND METAMORPHISM.

Arduin Rode, F.[1]; Singer, S.[2]; García Saltzmann, S.[2]; Franceschinis, P.[2]; Loureiro Olivet, J.[3]; Campal, N.[3]; Morales Demarco, M.[1]; Sánchez Bettucci, L.[1]
[1]Facultad de Ciencias, Universidad de la República; [2] Facultad de Ciencias Exactas y Naturales, UBA; [3] Dirección Nacional de Minería y Geología, Uruguay

Anisotropy of magnetic susceptibility and petrographic preliminary studies were carried out in metaconglomerates of Arroyo Grande Formation (AGF) and Carpintería Granite (CG), located in the east of Arroyo Grande Belt at the northern edge of the exposed area of the Piedra Alta Terrene (PAT), in southwestern Uruguay. The Arroyo Grande Belt (AGB) constitute one of the two main metavolcanic-sedimentary belts of PAT. It is a Paleoproterozoic (2.1 Ga) sequence conformed by supracrustal AGF and several associated intrusive granitoids. AGF is represented by a volcano-sedimentary succession affected by folding and regional metamorphism in greenschist to amphibolite facies. Siliciclastic rocks predominate and includes metarenites, quartzites, metarkoses, metapelites and metaconglomerates. Volcanic rocks are restricted to the southern zone and include metabasalts, metandesites and metadacites. The Carpintería Granite represent a late to post orogenic intrusion, discordant disposition with the regional structure; it lacks geochronological data, and it is a fine grained leucogranite with two micas. It is composed by quartz, microcline, muscovite, plagioclase, biotite, epidote and opaque oxide minerals as accessory. Scarce geological studies were carried out in the CG and in its host rock AGF, therefore, the study of the relationship between these units could be an important contribution to the geology and the tectonic evolution of PAT. AMS method allows to determine fabrics in rocks previously seen as isotropic, and allows to perform semiquantitative inferences in the intensity and symmetry of the magnetic fabric and in the deformation. The AMS measurements were carried out with a Kappabridge MFK1-FA (AGICO SA) susceptibility and the data were processed with the software Aniso 4.2. The measurements are consistent in each site and between them, which justifies an interpretation of the magnetic fabric. In both units the magnetic susceptibility is less than $50x10^{-5}$ SI, and it suggests that AMS signal is controlled mainly by paramagnetic minerals, likely micas. The degree of anisotropy is low in CG, less than 6 % and medium less than 14 % in AGF. The AMS scalar parameters show the dominance of lineal fabric with prolate ellipsoids and well-defined K1 axes in both units. The most conspicuous magnetic fabric feature in both units is the magnetic lineation. Magnetic lineations mostly strike in a NNE-SSW direction and they presents mainly medium plunging, irrespective of the lithological boundaries while the magnetic foliations are not clear. We conclude from this preliminary study that AMS data show only one magnetic fabric independently of lithology and that the considered area was subjected to an overall NNE-SSW stretching inferred from magnetic lineations. It is suggested an overprinted fabric, could be a result to a regional deformation event, and could suggest CG as a late-tectonic intrusion that it was subjected to such stretching during its emplacement.

KEYWORDS:ANISOTROPY OF MAGNETIC SUSCEPTIBILITY, MAGNETIC FABRIC, RIO DE LA PLATA CRATON.