We present a detailed magnetic fabric study of the Azibo (NE Portugal) contact that puts almost planar Orthogneissess from a Continental Terrane over strongly deformed amphibolites-gneissesschists from an Ophiolitic Terrane. The thrust contact is a major tectonic event occurred ca. 399±4 Ma, and is of fundamental importance for the study of the obduction processes associated with the uplift of the Variscan Belt. Geysers are composed of K-plagioclase (~Or95)
peropyroxene within a fine matrix of Qtz + Pl + Ms + K-feldspar + An10-30 plag + Fe-
clinopyroxene (Cpx). The observed structure is a pylite, gently dipping, mylonitic foliation; locally, a N-S stretching lineation is defined by platyaxial deformed minerals and micas. Amphibolites consist of Mg-silicates + plag + Qtz. The metamorphic layering is strongly deformed by folds with sub horizontal hinges striking 220° and axial planes with identical strike and dipping 30° NW. A secound foliation developed axial planar to minor crenulation folds, defining an intersection lineation with the metamorphic layering. Locally, a mineral foliation defined by prismatic crystals of epidote is developed. Both lineations are parallel to the foliation. Both magnetic susceptibility values are very well grouped, reflecting a homogeneous distribution of the magnetic carriers. The shapes of magnetic ellipsoids range between oblate (long limbs) and prolate (short limbs). Intermediate but mostly ovoid, shapes belong to the hinges. The magnetic foliation is sub-parallel to the mylonitic lineation. Orientation of the magnetic foliation is usually consistent with the folded metamorphic layering. There are, however, significant differences between dip values at the hinges and short limbs; the pole of the metamorphic layering is subhorizontal at the short limbs, while the magnetic foliation poles dip between 30° and 50°. This discrepancy is discussed in terms of multi-scale deformation processes and/or relationship between metamorphic layering and magnetic fabric.