

ANISOTROPY OF MAGNETIC SUSCEPTIBILITY OF TRIASSIC RED BEDS FROM THE CONRARIA FORMATION, CENTRAL PORTUGAL

¹Gomes, Celeste R.; ²SANT'OVAIA, Helena; ¹Rocha, Armando L.

¹CGUC; Departamento de Ciências da Terra, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Largo Marquês de Pombal, 3000-272 Coimbra. E-mail: romualdo@ci.uc.pt

²CGUP; Departamento de Geologia, Faculdade de Ciências da Universidade do Porto, Rua do Campo Alegre, 687; 4169-007 Porto.

The Conraria Formation is the lower unit of the Grés de Silves Group (Silves Sandstones Group) of Upper Triassic age. It is the sum of two subunits which have mean thickness of 40 ± 5 m and 120 ± 15 m, respectively, in the Coimbra region.

The main goal of this study is to quantify the petrofabric features of the upper subunit of the Conraria Formation.

The samples were collected with a portable field drill and in-situ oriented with a magnetic compass on two outcrops in the eastern part of the Coimbra region. Measurements were performed in the Department of Geology of the Porto University with a Kappabridge susceptometer KLY-4S ($\pm 3.8 \times 10^{-4}$ T; 920 Hz) (Geofyzica Brno) with a sequence of 3 susceptibility measurements along different orientations of each specimen.

Preliminary studies of Anisotropy of Magnetic Susceptibility (AMS) were carried out on 15 sites in order to characterise the magnetic fabric. The magnetic susceptibility of these samples is comprised between 45.6 and 132.3×10^{-6} SI and is due to ferromagnetic hematite and paramagnetic phyllosilicates. Magnetic anisotropy (described by the parameter $k_{\max}/k_{\min}-1 \times 100$) is comprised between 0.8 and 5.7 %. AMS fabric show consistent patterns in the studied sites: NW-SE-trending Western low dipping magnetic foliations associated with subhorizontal N198° trending magnetic lineations. The studied sites have an oblate fabric and retain a primary sedimentary fabric, with K_{\min} closely perpendicular to the bedding plane. The general parallelism of the oblate fabric with bedding likely indicates a composite fabric between a primary sedimentary fabric and an early tectonic layer parallel shortening fabric.

The AMS values from throughout the Conraria Formation provide a complementary dataset to existing paleomagnetic, fracture, and strain data that can be used to construct an integrated cinematic model of Lusitanian Basin evolution.

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Celeste Santos Romualdo Gomes; Largo Marquês de Pombal; FCTUC; 3000-272 Coimbra, Portugal; romualdo@ci.uc.pt