

MAGNETIC ANISOTROPIES IN THE HIGH-GRADE METAMORPHIC ROCKS FROM THE RIBEIRA BELT, SE RIO DE JANEIRO STATE, BRAZIL.

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High-grade metamorphic samples from 67 sites widely distributed between the Três Rios and Natividade cities were collected for magnetic anisotropy analyses. These rocks crop-out along the Além-Paraíba dextral shear zone and belong to the Juiz de Fora Complex. They were affected by the Brasiliano orogeny which was responsible by the structural pattern observed nowadays. Magnetic anisotropies were determined, mainly in the granulites which are macroscopically isotropic, applying both anisotropy of low-field magnetic susceptibility (AMS) and anisotropy of remanent magnetization (ARM) techniques. Hysteresis and thermomagnetic (from both high and low-temperature) curves indicate that the AMS fabrics are carried by both para- and ferromagnetic mineral, while Ti-poor magnetite is the main carrier of the ARM fabrics, which are exclusively due to ferromagnetic minerals. The AMS fabric orientations compare favorably with the mesoscopic-scale fabrics. In general, the K_{max}-K_{int} principal plane of the AMS (magnetic foliation) is close to the observed mineral foliation defined by biotite and plagioclase, and K_{max} (magnetic lineation) axis is aligned parallel to a mineral lineation defined by the same minerals. The ARM fabric orientations show the same pattern as AMS fabrics for some sites. However, for other sites these fabrics are a little bit different, mainly the magnetic lineation, suggesting that they are related to different deformation stages.