

MAGNETIC FABRIC IN THE GRANITE PLUTON OF ARROZAL FROM SW RIO DE JANEIRO STATE, BRAZIL: ITS SIGNIFICANCE AND RELATIONSHIP WITH MAGMA EMPLACEMENT.

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The Arrozal granite is a NE-SW elongated ellipsoidal dominantly syenogranitic pluton which intrudes the Paleoproterozoic basement complex. The pluton was emplaced along the NE/SW-trending dextral high-angle ductile strike-slip Além-Paraíba shear zone. The pluton does not show solid-state deformation in the center, but mylonitic textures are found at the borders. The main magmatic fabric of the pluton (N45E/SV) makes an angle about 30° with host-rock structures, suggesting that Arrozal was syn-kinematically emplaced under transpressive regime. The magnetic fabric was determined applying the anisotropy of low-field magnetic susceptibility (AMS) technique. It was performed in the rocks mainly from the center of the pluton. AMS fabric shows that magnetic lineation (K1) is mainly gently dipping and strikes NE, parallel to the long axis of the pluton, which agrees with the magmatic foliation traces measured in the field. Hysteresis and thermomagnetic curves reveal that AMS is dominantly carried by paramagnetic minerals. It means that the AMS is defined by the magnetocrystalline anisotropy of Fe-bearing silicates, which is generally coaxial with the crystallographic axes of these minerals. The magnetic fabric pattern found in the Arrozal granite suggests that K1 indicates magma flow, or magmatic deformation related to the syntectonic emplacement of the pluton.