



SNBNO: 1685526

**"A"-TYPE RIFT-RELATED GRANITE AND THE LOWER CRYOGENIAN AGE
FOR THE BEGINNING OF THE BRUSQUE BELT BASIN,
DOM FELICIANO BELT, SOUTHERN BRAZIL**

**Basei, M.A.S.¹, Grasso, C.B.¹, Vlach, S.R.F.¹, Nutman, A.²,
Siga Jr., O.¹, and Osako, L.S.³**

¹ Instituto de Geociencias-USP- Rua do Lago 562, CEP-05508080, São Paulo, Brasil, baseimas@usp.br

² Beijing SHRIMP Centre, Chinese Academy of Geological Sciences, 26, Baiwanzhuang Road, Beijing, 100037 China

³ Departamento de Geologia, Universidade Federal do Ceará, Bloco 912, CEP60455-760, Brazil.

ABSTRACT

For the first time the results of a geological study carried out in pre-tectonic, mylonitic granitoids well-exposed in the Morro do Parapente, south of Gaspar, is presented. These rocks occur as tectonic slices in the Brusque Group metasediments and were once considered Paleoproterozoic basement gneisses of the Brusque Group. Nd model ages (TDM) obtained for these rocks fall in the 1,99 Ga - 2,14 Ga interval, which is a common pattern for Brusque Group rocks; epsilon Nd(t) values between -9,17 and -9,47 indicate the crust had an important participation in the granite genesis. These hololeucocratic, totally recrystallized and mylonitized granites are geochemically classified as A-type granites. They are moderately peraluminous, enriched in incompatible elements, and related to the syn-rifting granite genesis that preceded sediment deposition in the Brusque paleobasin. U/Pb dating resulted in a U-Pb IDTIMS age of 834,7 Ma \pm 8,7 Ma for these leucogranites, obtained from well-developed prismatic faces biterminated zircon crystals. The SHRIMP result, 843 Ma \pm 12 Ma, confirmed the value obtained by the conventional method. This age places the magmatism in the lower Cryogenian, at the Tonian boundary, therefore being the first occurrence of A-type igneous rocks in this period in southern Brazil. Its characterization as pre-tectonic allows inferring that this was the period of the rift phase of the basin that generated the Brusque Group metasediments, and consequently the oldest age known for the beginning of the Dom Feliciano Belt geological history in Santa Catarina.