



Universidade de São Paulo

Biblioteca Digital da Produção Intelectual - BDPI

Departamento de Geofísica - IAG/AGG

Comunicações em Eventos - IAG/AGG

2014

Ar-Ar step heating ages for milonitic low angle shear zones rocks in the Rio Apa Terrane, south of the Amazonian Craton

South American Symposium on Isotope Geology, 9, 2014, São Paulo

<http://www.producao.usp.br/handle/BDPI/45869>

Downloaded from: Biblioteca Digital da Produção Intelectual - BDPI, Universidade de São Paulo

Ar-Ar STEP HEATING AGES FOR MILONITIC LOW ANGLE SHEAR ZONES ROCKS IN THE RIO APA TERRANE, SOUTH OF THE AMAZONIAN CRATON

Amarildo Salina Ruiz – Universidade Federal de Mato Grosso, *Maria Zelia Aguiar de Sousa* – Universidade Federal de Mato Grosso, *Gabrielle Aparecida de Lima* – Universidade Federal do Pará, *Manoel Souza D'Agrella Filho* – Instituto de Astronomia, Geofísica e Ciências Atmosféricas/USP.

This work presents geological, structural and geochronological (Ar-Ar step heating in muscovite) results obtained for the milonitic rocks in low angle shear zones in order to discuss its deformational and tectonic significance for the crustal evolution of the Rio Apa Terrane, southernmost part of the Amazonian Craton. The Rio Apa Terrane consists of a continental cratonic fragment, which has been divided by Cordani et al. (2010) into two tectonic blocks (eastern and western blocks) with distinct crustal evolution and separated by a suture zone. Thrust zones occur both the western and the eastern blocks and display cinematic indicators which indicate a low angle ductile deformation, with top tectonic transport (vergence) moving to NWW. The Rio Apa Complex consists of grey-green colored leucocratic syeno to monzogranitic gneisses with biotite and garnet as the mafic minerals. The shear zone rocks display foliated arrangement with dominant milonitic and protomilonitic textures, characterized by muscovite-garnet milonite gneiss, oriented N10-20E/10-30°SW. $^{40}\text{Ar}/^{39}\text{Ar}$ step heating dating on muscovite from milonite show metamorphism ages of 1302 ± 4 Ma and 1295 ± 6 Ma suggesting that the low angle shear zones are contemporaneous to the regional thermal event previously registered by the K-Ar and $^{40}\text{Ar}/^{39}\text{Ar}$ radiometric ages by Cordani et al. (2010) both in the western as western block of the Rio Apa Terrane.

Craton
Geochronologia
Geologia
Rio Apa
Amazônia