

## **FLUID INCLUSIONS IN THE GOLD DEPOSIT OF THE SÃO JORGE GRANITE, TAPAJÓS, BRAZIL.**

1RONCHI, L. H., 2DALL'AGNOL, R., 2LAMARÃO, C. N. 2BORGES, R. M. K. 1UNISINOS, São Leopoldo, Brazil; 2UFPA, Belém, Brazil.

The Paleoproterozoic São Jorge granite is situated in Tapajós Gold Province. Its main facies is a hornblende - biotite - monzogranite. It was affected by phyllic and carbonatic hydrothermal alteration with associated pyrite and gold mineralization. All the studied samples show the primary monzogranite quartz with the same type of secondary fluid inclusions probably related to the hydrothermal alteration. These inclusions have irregular polygonal shapes, sometimes clearly related to necking down and variable sizes from less than 5 micrometers up to 20 micrometers. The necking down process created aqueous one and two phased inclusions. It is probably responsible for some strong filling degree variation, at 20°C, in the aqueous-carbonic inclusions. Despite this restriction, it is possible to estimate the most common carbonic phase filling degree as ca. 40%. CO<sub>2</sub> homogenization temperatures, mainly to the liquid, but also to vapor phase, are near the critical point (31.1°C), clathrate dissolution temperature are variable from 4.0 to 6.0°C, and salinity between 7 and 10% eq. wt. NaCl. The CO<sub>2</sub> melting temperature (~-59.0°C) strongly suggest the presence of other volatile as, for example, CH<sub>4</sub>. Such inclusions did not decrepitate during heating and show total homogenization temperatures from 300 to 340°C, in the liquid phase. The chlorite geothermometer suggest the same temperature range as the observed for the aqueous-carbonic fluid inclusions, which implies formation pressures ca. 1kbar. Comparatively late inclusions were also described. They define trails and are of two kinds: 4 micrometers, dark, one phase inclusions and 1 micrometer, aqueous, one phase inclusions.