

## **Fluid inclusion studies at the Patinhas gold-quartz mineralization, Tapajós Gold Province, Amazon, Brazil**

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The Patinhas lode-gold, in the Marupá-Crepouri area of the Paleoproterozoic Tapajós Gold Province, is controlled by an N20°-30°E-trending brittle-ductile shear zone crosscutting a foliated granodiorite of the Cuiú-Cuiú Complex. Milky quartz and minor pyrite and chalcopyrite compose the vein. Epidote and kaolin, along with quartzo-feldspatic veinlets, dominate the wall-rock alteration.

Quartz crystals showing moderate to strong undulose extinction and subgrain development, suggest that the vein shearing processes have resulted in the small cloud secondary fluid inclusions. Nevertheless, early fluid inclusions can also be found in areas of low-strained or relic quartz, representing possible modified primary (in respect to the host quartz) inclusions, or they were introduced during the vein shearing.

Microthermometric studies performed in the low strain domains have identified three types of fluid inclusions: carbonic, aqueous-carbonic and aqueous fluid inclusions. The aqueous-carbonic fluid is interpreted as being the mineralizing fluid, trapped between 300-380°C and 1.5 to 4.8kb, under immiscibility and/or pressure fluctuation processes. This type has low to moderate salinity and moderate bulk density. The carbonic inclusions are considered as either part of the immiscibility process or product of post entrapment modification of the aqueous-carbonic inclusions, by leakage of the water content.

The structural and fluid characteristics found in the Patinhas deposit are compatible with mesothermal or orogenic gold deposits worldwide.