

## **INTEGRATED STUDIES AND METALLOGENIC EVOLUTION OF THE MESO AND NEOPROTEROZOIC SEDIMENT-HOSTED PB-ZN DEPOSITS OF THE SÃO FRANCISCO CRATON, BRAZIL**

1MISI, A., 2IYER, S.S., 3COELHO, C. E. S., 4 FRANCA-ROCHA, W. 4J. S. GOMES, A.S.R., 5CUNHA, I.A., 6TASSINARI, C. C. G. and 7TOULKERIDIS, T. 1 Centro de Pesquisa em Geofísica e Geologia, Universidade Federal da Bahia, Salvador, BA 40210-340, Brazil. misi@ufba.br 2 Department of Physics and Astronomy, University of Calgary, Canada 3 Universidade Estadual de Feira de Santana, Bahia, Brazil 4 Curso de Pós-Graduação em Geologia, Universidade Federal da Bahia, Brazil 5 Centro de Pesquisas Geocronológicas, Universidade de São Paulo, Brazil 6 Universidad de San Francisco de Quito, Ecuador.

Integrated studies carried out on the Proterozoic sediment-hosted Pb-Zn sulfide deposits of the São Francisco Cráton, Brazil, permit the estimation of the age of the host sequence and the timing of mineralization, the possible sources of metal and sulfur, the temperature and salinity range of mineralizing solutions, the source of fluids and possible mechanisms of fluid flow. The deposits are partially syndiagenetic and epigenetic and were probably formed during extensional events. The Pb isotopic data of sulfides are relatively homogeneous for individual deposits and plot above the upper crust evolution curve of the plumbotectonic model. The Pb isotope data for two of the deposits are highly radiogenic ( $^{206}\text{Pb}/^{204}\text{Pb} = 21$ ), and plot in linear arrays. Among the deposits, the Morro Agudo and Vazante are least radiogenic, and the values show remarkable homogeneity ( $\sim 17 \pm 0.08$ ). Seawater sulfates in the sediments appear to be the source of sulfur for the Neoproterozoic deposits, that show a remarkable stratigraphic control (shallow water dolomites). The relatively high temperatures (100 to 250°C) and moderate salinity (3 to 20% NaCl equiv.) of the fluids, suggest basinal mineralizing fluids.