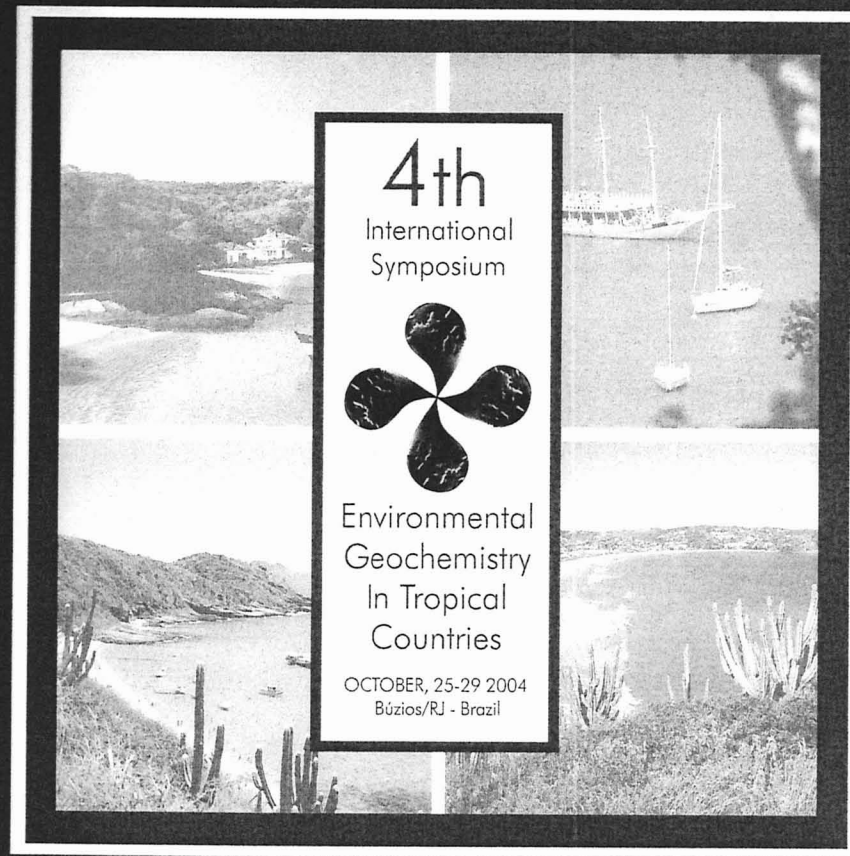


4th International Symposium



Book of Abstracts

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Welcome Address

On the behalf of the Scientific and Organizing Committees, we would like to welcome you to Búzios, Brazil and 4th International Symposium Environmental Geochemistry in Tropical Countries fi 4th ISEGTC.

This Symposium is the fourth time of this Symposium following on previous Symposia in Niterói, Brazil (1993), Cartagena, Colombia (1996) and Nova Friburgo, Brazil (1999). The aim of this 4th International Symposium Environmental Geochemistry in Tropical Countries is to facilitate communication between senior and junior scientists working on different aspects of tropical environmental geochemistry. This is an excellent opportunity for environmental experts to discuss problems of mutual interest and global significance. We are certain that the 4th International Symposium Environmental Geochemistry in Tropical Countries will be the catalyst for fruitful and interesting discussions, and allow the participants to share know-how from different countries. Scientists from more than 20 countries will get together in Búzios, including: Argentina, Áustria, Belgium, Brazil, Botswana, Canadá, Chile, Costa Rica, Colombia, Croatia, Cuba, Denmark, France, Germany, India, Japan, Mozambique, New Zealand, Portugal, Spain, United Kingdom, USA, Venezuela and Zimbabwe.

All these contribution shown that a large interest exists for tropical environmental geochemistry, and also demonstrated the necessity of the perspectives for solving tropical environmental problems.

correlate with the higher concentrations of elements in soils of the low river basin (zone 2) and lower concentrations of elements in the high river basin of the Bogotá river (zone 1). Bi-varied analysis showed significant positive relations between As-Cd, As-Cr, As-Mo, As-Ni, As-Zn, Cd-Mo, Cd-Ni, Cd-Zn, Co-Mn, Mo-Ni, Mo-Zn and Ni-Zn. Multi-varied analysis allowed differentiating three association groups: group 1 - As, Cd, Cu, Cr, Mo, Ni and Zn; group 2 - Co and Mn; and group 3 - Pb, not displaying significant correlation with any other element. These groups correspond to natural geochemical associations characteristic of sedimentary rocks, shale type (lutites), mainly mudstones, siltstones or black claystones, siliceous or calcareous, wide distributed in the studied zone, especially in the low river basin. They represent also common associations of residues of activities such as industry, agriculture and transport. Lead behaviour, on the other hand seems to indicate mainly anthropic origin (old leaded gasoline and industrial emissions). The accumulation of elements in superficial waters is not correlated with its accumulation in soils, indicating in some cases diverse origin for each media, and in other cases reflecting intrinsic local geochemical properties for soils and waters. The dispersion of elements from soils to sub-superficial waters occurs naturally; nevertheless reducing conditions in waters promote retention of elements in soils. The systematic sampling carried out along the Bogotá River basin, allowed to determine accumulation levels of potentially harmful elements, to discriminate possible origin and to analyze parameters and factors that determine local mobility and bio-availability of these elements. This information contributes to the geochemical base lines definition, is basic to soil use planning and is support to the Bogotá River basin management.

References

- VROM, 1994. Environmental Quality Standards for Soil and Water. Ministry of Housing Physical Planning and Environment.

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EVALUATION OF SOIL CONTAMINATION BY HEAVY METALS IONS (Cu, Ni AND Cr) ASSOCIATED WITH ELECTROPLATING INDUSTRY

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Among heavy metals there are those classified as essential (macro and micronutrients), that in relatively high concentration however are considered toxic and harmful to human health and to environment. The destiny of solid wastes generated by effluent treatment and industrial activities generally brings many problems related to the environment. The aim of this work is to investigate the effects of an electroplating industry, which generates hazardous wastes with high heavy metals concentration, to the surrounding area.

The disposition of wastes in soil, in the open air or barrel stored, was a common practice in the past. Recently, hazardous wastes are sent to industrial landfill, although the problems of place to store and the high cost involved with alternatives of wastes final destination still stand. The regarding site, where this project is developed, until little time, the waste was deposited next to Aricanduva River, an important affluent of Tietê River, in the City of São Paulo. Previous studies detected pollutant ions especially copper, nickel and chromium in the sludge. The total heavy metal concentrations will be determined in soil, superficial waters and groundwater samples of selected areas. The mechanism of fixation and mobility of heavy metal in these fractions of environment will also be investigated by sequential extractions, which results will certainly serve as subsidies to develop a mitigation methodology and reuse of metals in higher concentration.