Poster presentation

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Trace and Rare Earth elements determined in sediment cores from Nhecolândia Pantanal, MS, Brazil

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The Brazilian Pantanal is the world's largest wetland, and it is subdivided in 11 sub-regions. The Nhecolândia Pantanal is one of them, and it has his particular characteristics, such as geomorphology, pedology, geochemistry, and biochemistry. Despite the importance of the Pantanal, this biome is not well known, which increases the possibility of his degradation, arising from its occupation and improper use of the land. Currently, it has been affected by human action, what puts in risk this entire environment. By analyzing, the chemical composition of sediments is possible to obtain an historical scenario of changes that may have occurred in natural systems over time, because a great amount of information that may have happened are recorded in the different layers that form a sediment column. In the upper layers of these cores may be found information about the influence of the human activity in the last century. With the goal to evaluate a probable human impact, a project was established at Pantanal da Nhecolândia, Mato Grosso do Sul, Brazil, in 2011. Two sediment cores were collected in two Salinas of Nhumirim farm, Salina 6 and Salina Almir with the goal of determining the chemical composition of the sediments. Using instrumental neutron activation analysis technique (INAA), the elements As, Ba, Ce, Co, Cr, Cs, Eu, Fe, Hf, K, La, Lu, Na, Nd, Rb, Sb, Sc, Se, Sm, Ta, Tb, Th, U, Yb and Zn, were analyzed in the fine fraction (silt + clay) and coarse fraction (sand) of the sediment; the grain size analyses and water content were also determined. The grain size analysis showed that the Salinas have a low percentage of silt and clay, what is characteristic of Pantanal. It was found high values of As concentration; that may be explained by the presence of natural deposits of this element in the region. It was also observed a higher concentration of the elements Hf and Rb in the sand fraction, although these elements are commonly associated to the silt and clay fraction. Comparing the concentrations determined in the fine fraction with the coarse, is remarkable a decrease in the concentration of the elements in the coarse fraction. Factorial and cluster analysis were applied for the data interpretation.