FLUTUAÇÕES TEMPORAIS DOS ELEMENTOS NUTRIENTES DISSOLVIDOS, DO MATERIAL EM SUSPENSÃO E DAS CARACTERÍSTICAS FÍSICAS DA ÁGUA NA PARTE SUL DO ESTUÁRIO DA LAGOA DOS PATOS E PRAIA DO CASSINO - RS

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RESUMO

Em três locais no estuário da Lagoa dos Patos e um na praia do Cassino, em seis períodos de seis dias desde novembro de 1981 até setembro de 1982, foram geradas séries temporais de salinidade, temperatura, pH, oxigênio dissolvido, material particulado em suspensão, amônia, nitrato, fosfato e silicato da água. As amostras foram tomadas uma vez por dia e num dia de cada período, cinco vezes a cada duas horas. Isto foi feito para descrever a variabilidade temporal e espacial destas propriedades e elucidar as principais causas desta variabilidade, através do relacionamento delas entre si e com chuva, vento e temperatura do ar.

As variabilidades diárias e horárias foram importantes em todas as coletas nas áreas estudadas. Foram registados variações em torno de 20°/oo em salinidade, 150 mg/L em material em suspensão, 50 μat-g/L de fosfato e nitrato, 100 μat-g/L de amônia e silicato e 5 μat-g/L de nitrito en-
ABSTRACT - TEMPORAL FLUTUATIONS IN THE DISSOLVED NUTRIENTS, SUSPENDED MATERIALS AND SOME PHYSICO-CHEMICAL CHARACTERISTICS OF THE WATER FROM THE SOUTHERN PART OF THE PATOS AND PRAIA DO CASSINO ESTUARIES (R.S., BRAZIL)

Time series analyses of salinity, temperature, pH, dissolved oxygen, suspended particulate matter, ammonia, nitrite, nitrate, phosphate and silicate concentration were generated for three locations of south estuary of Patos Lagoon and one in Cassino Beach, Rio Grande do Sul, Brazil, for six periods of six days each between November 1981 to September 1982. The samples were taken once a day and for one day of each period every two hours. This was done to describe temporal and spatial variability of these ecological variables and to elucidate the main factors that cause
variability, through their interrelationship and also with rain, wind and temperature data.

Daily and hourly variability was observed for all sampling sites. Variations of 20% in salinity, 150 mg/l in suspended matter, 50 μat-g/l of phosphate and nitrate, 100 μat-g/l of ammonia and silicate, 5 μat-g/l of nitrite, were recorded between days of the same period. In general, the variations of pH and dissolved oxygen were low, specially for Cassino Beach.

A descriptive analysis, based on superposition of graphs showed that salinity fluctuations were associated with rain, wind, suspended matter, pH, dissolved oxygen and silicate fluctuations. The ammonia and phosphate variations were directly related and their high concentrations were due to the proximity of the industrial and urban areas. The nitrate and nitrite variations were associated with the variations of water temperature.

Analysis of variance (with multiple classification analysis) and multiple linear regression, confirmed the descriptive interpretation, verified that the observed fluctuations were significant and provided statistical relationships between the parameters.