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Relationship Between Methane Gas Exchange and Physical Limnology in Inland Lake in Brazil

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Tropical lakes, just like other water systems, present permanent exchanges of trace gases with the atmosphere. Environmental factors, connected with seasonal climate variations in the regions where they are located, have great influence on the variability of these gas exchanges. In the case of CH4 gas fluxes there is great emission in the dry period. In the rainy period, there is a total inversion of the previous pattern, that is, greater absorption of CH4. Based on correlation with data relating to the speciation of allochthonous carbon (POC, DOC, DIC) and physicochemical parameters, situations based on the seasonal periods, i.e. dry, rainy and transitional – including therefore the influence of these factors – were studied and analyzed. It was observed that the inflow of organic matter brought by tributaries, and the surface outflow resulting from rainfall, constitute the greatest factors influencing the modulation of the main components that effect the exchanges of the gas studied.