



Variability in methane ebullition in several tropical hydroelectric reservoirs

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Research on ebullition from natural water bodies has been performed since the 1970s but in the case of hydropower reservoirs studies are more recent.

Ebullition of methane was measured in eight hydroelectric reservoirs operated by Furnas Centrais Elétricas in tropical regions of Brazil. In a wide range of age, size, and shape, seven reservoirs are located in central and southeastern Brazil in a biome known as Cerrado and another one is located in an highly industrialized region in the Atlantic forest region. Samples were taken during three climatic seasons in each reservoir: at the beginning of the rainy season (November), at the end of the rainy season (March-April), and during the dry season (July-August). Bubbling emissions gas exchanges at the water–air interface were determined in reservoir surface considering distinct sites. The ebullitive emissions were determined using 0.75 m² funnels placed 30 cm below the surface in several places in the reservoirs in depths varying from 5 to 20 m. Funnels were deployed at each sampling station for 24 hours. Emissions were interpolated to the whole reservoir by weighting for reservoir morphometry.