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## Accessing the Potential of Satellite and Telemetric Data to Evaluate the Influence of the Heat Flux Exchange in the Water Column Mixing and Stratification

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### ABSTRACT

The objective of this work is to evaluate the feasibility of moderate resolution satellite data estimating the surface heat balance in a tropical hydroelectric reservoir. Each component of the heat flux balance was computed using the MODIS (Moderate Resolution Imaging Spectroradiometer) water surface temperature (WST) level 2, 1 km nominal resolution data (MOD11L2, version 5) from 2003 to 2008. The consequence of the heat flux exchange in the water column thermal structure is also investigated. The passage of cold front over a region decreases the atmospheric pressure and air temperature, enhancing the relative humidity. The sensible flux presents a small variability but an increase occurs due to a convective turbulence caused by front passage. The latent flux decrease but insufficiently to cause a condensation, just the evaporation decreases. The upwelling events are the responsible to maintain the loss of heat after the cold front passage.

### KEYWORDS

Thermal Infrared; Heat and Cooling; Mixing; Stratification

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