

EVALUATION OF SURFACE FLUXES USING THE WRF MODEL – A CASE STUDY TO THE BANANAL WETLANDS' REGION

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ABSTRACT

The present work aimed to analyze the simulations of surface fluxes of sensible and latent heat, and global radiation using the mesoscale atmospheric model (WRF) for the Bananal Island (Tocantins state, Brazil) region during three distinct seasonal periods (flooded, dry, and wet) in 2004. The final analysis of the NCEP global model was used as initial and boundary conditions of the WRF, which horizontal resolution (5 km) and physical parameterizations follow the operational settings used at CPTEC/INPE. The global radiation, the simulated sensible and latent heat fluxes were consistent with the observed data for the daily cycle, where the R^2 was higher than 0.8, showing a good correlation between the data. However, the WRF outputs overestimates/underestimates follow a distinct seasonal pattern between global radiation and heat fluxes. There are some hypotheses for this result, such as potential limitations of the model in describing the surface conditions, whether static or dynamic. Future studies may investigate how sensitive the WRF would be when updating surface conditions for scenarios closer to reality, especially the flooded surface situation.