

## 20) POSTER

### SOIL THERMAL PROPERTIES UNDER FOREST, PASTURE AND MANGROVE IN EASTERN AMAZONIA

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The deforestation and the subsequent land use change may result in significant alterations in the energy and water balances in the soil-vegetation-atmosphere continuum. The soil thermal properties, that is, the diffusivity, the conductivity and the volumetric heat capacity, specially as a function of the water content, are currently not readily available. Notwithstanding, the demand for these data is increasing due to requirements in, e. g., coupled models of heat and moisture transport in the soil near its surface, which are part of numerical weather and climate models. Thus, measured soil moisture content at the 30cm depth and temperature profiles at the 5, 20 and 50 cm depths were used to obtain thermal soil properties at four different sites in the state of Pará, Eastern Amazonia, during the wet season of 2002: (i) forest (Caxiunã Reserve, Melgaço - 01°42'30"S; 51°31'45" W); (ii) pasture (Soure, Marajó Island - 00°43'25"S; 48°30'29" W); (iii) natural mangrove (Tracuateua, Bragança - 00°50'31"S; 46°38'56"W); and (iv) degraded mangrove (Tracuateua, Bragança - 00°55'31"S; 46°42'13"W). The thermal diffusivity is obtained through the numerical method described by Alvalá et al. (1996). The impact of changing moisture conditions on the thermal soil properties is also investigated. Reference: Alvalá, R.C.S.; Gielow, R.; Wright, I.R.; Hodnett, M.G. Thermal diffusivity of Amazonian soils. In Gash, J.H.C; Nobre, C.A.; Roberts, J.M.; Victoria R.L. (eds.) Amazonian Deforestation and Climate. Chichester, Wiley, 1996. pp. 139-150.