



Influence of surface scheme on the intraseasonal and interdecadal variability of the West African Monsoon rainfall.

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The African Monsoon system is studied at LPAOSF in Dakar with a light version of the LMDZ global climate model, the grid of which has been refined over West Africa (zoom) to reach an horizontal resolution of about 120 km. This version is used here to study the interdecadal variations and the drought of the 70s-80s as well as intraseasonal variability of rainfall. In order to identify the impact of surface processes in that frame, an idealized surface scheme has been developed, in which surface evapotranspiration is prescribed as $E=b*E_{pot}$ where E_{pot} is the potential evapotranspiration of a nude surface and b is depending on latitude and season. With this scheme, climate feedbacks through subsurface moisture are turned off. We compare this version to another one with much more complex and realistic surface scheme (ORCHIDEE). Then we estimate the contribution of surface feedbacks to the internal variability (at intraseasonal time scales particularly) and the response of the West Africa monsoon system to decadal changes of sea surface temperatures.