



Hydrological changes in the tropics: an Holocene perspective

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Past climates offer a large set of natural experiences that can be used to better understand the relative role of different climate feedbacks arising from changes in the Earth's global energetics, Earth's hydrological cycle or from the coupling between climate and biogeochemical cycles. In addition, the numerous climate reconstructions from different and independent ice, marine and terrestrial climate archives allow to test how climate models reproduce past changes and to assess their credibility when used for future climate projections. The presentation will review some of the mechanisms affecting the long term trend in the location of the intertropical convergence zone and the Afro-Asian monsoon. Using simulations of the PMIP project, as well as sensitivity experiments with the IPSL model, I'll discuss the role of monsoon changes in the global Earth's energetics and the different feedbacks from ocean and land-surface. The presentation will contrast the conditions in the Early, the mid and late Holocene and show how robust features of monsoon changes can be used to better assess future changes in regions where model results are uncertain, such as West Africa.