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Mid to late Holocene climate evolution from a multi-complexity ensemble simulations

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The Holocene is characterized by long term changes in seasonality induced by insolation that is punctuated by several climatic events. How different feedbacks from the surface hydrology, vegetation or dust have shaped regional trend, seasonality, variability and abrupt events is not well understood. It is also unclear if interannual to centennial events that have punctuated the transition from mid to late Holocene results from the long term trends in the forcing or are stochastics. We investigate this questions using a multi-complexity ensemble of mid to late Holocene simulations with the IPSL Earth System model that allow to test soil hydrology, dynamical vegetation, dust and land-sea closure of the fresh water flux. Considering this ensemble we'll discuss common long term characteristics in seasonal trends depending on regions, the relationship between trend and variability in Indian and African monsoon regions, as well as teleconnections between the precipitation in these regions and the long term evolution of the ENSO phenomenon in the tropics. Limitations will also be discussed from the differences between the simulations and comparisons with various climate reconstructions.