Tutorial MON : sensitivity of the simulation of the African monsoon to the orchidee scheme

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1 Installing a parallel version of the LMDZ/Orchidee model on obelix

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Run a 3-day simulation with a zoomed and nudged version over West Africa.

Look at the results : `precip` (rainfall), `vitu` and `vitv` (zonal and meridonal components of the atmospheric circulation), `rhum` (relative hmidity).

The analysis can be done in particular in terms of horizontal maps or as latitude-time cross section of 10W-10E zonal averages that show the meridional strucures.

The temprature (and humidity) tendency for dynamics `dtdyn`, deep convecion `dtcon`, thermal plumes `dtthe`, vertical turbulent diffusion `dtvdf`, large scale condensation `dtlsc`+`dteva`, and cold pools `dtwk` (same thing with `dq` in place of `dt` for humidity.

1.1 Sensitivity to surface scheme

Identify the type of vegetation (PFT) active over Sahel.

Change the albedo for the dry sol and/or for this particular PFT.

Rerun a 5-day simulation.

Change the roughness length of the vergetation.

Prepare long simulations for the next session.

Diagnose the surface energy balance with `flat` (latent heat flux) `sens` (sensible heat flux), `sols` (SW net radiation at surface) and `soll` (LW net radiation at surface), and water budget `evap` and `precip`.

A sensitivity experiment to the soil thermal inertia can be performed as well.

1.2 Sensitivity to atmospheric physics

Also two version of the physics with stockastic triggering or not can be activated. Look at the day-to-day variation of rainfall.