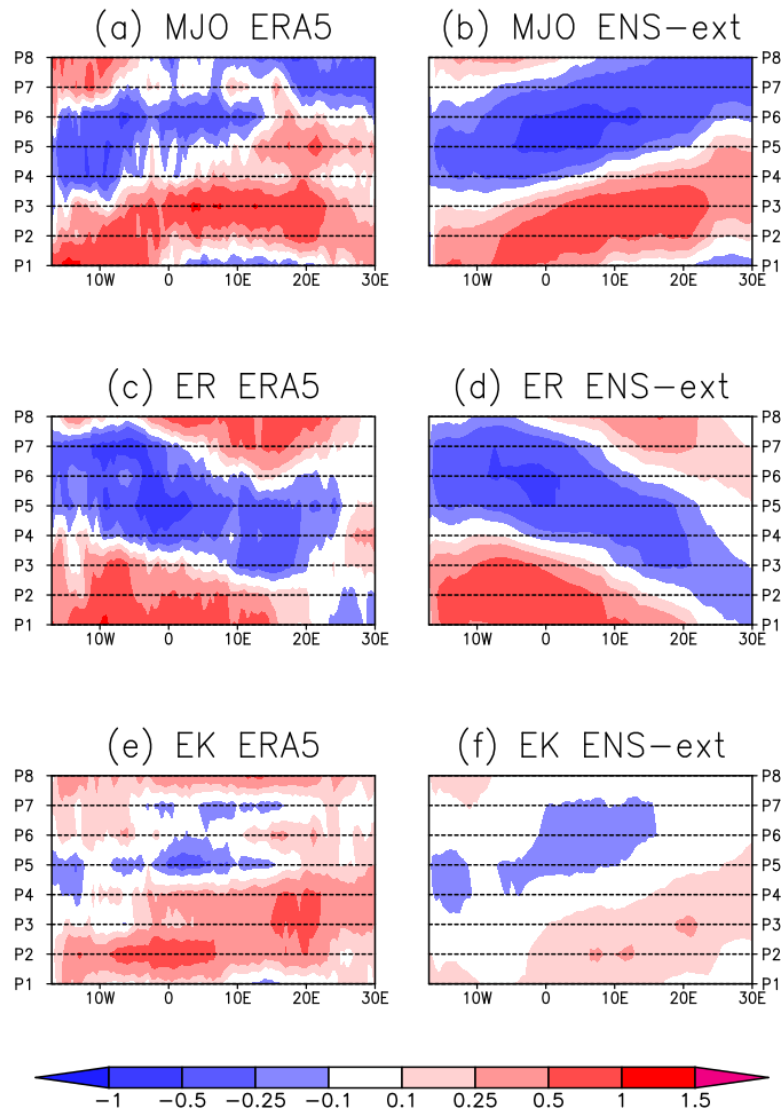


# Prediction skill of Sahelian heatwaves out to subseasonal lead times and importance of atmospheric tropical modes of variability



- ✓ The ECMWF ensemble extended-range forecasting system (ENS-ext) gives skilful forecast of Sahelian heatwaves out to three weeks ahead.
- ✓ The predictability is longer in spring (AMJ) than in late winter (FM), and for the nighttime heatwaves than the daytime's.
- ✓ The predictability can be extended when less rigorous but still relevant (for early actions) assessments are made.
- ✓ ENS-ext predicts fairly well the local activity of the MJO and ER waves in the Equatorial West Africa sector, and skilfully simulates their impacts on Sahelian heatwaves.
- ✓ The MJO and ER wave are good sources of subseasonal predictability as ENS-ext behaves better when they are active in the region.
- ✓ An increase of the skill of Sahelian heatwave prediction is expected in the future with the continual improvement of the representation of convection and tropical modes in models.

Modulation of Sahelian (10-20°N) heatwave frequency of occurrence by the MJO and the equatorial Rossby (ER) and Kelvin waves (EK) in ERA5 vs ENS-ext

Guigma, K. H., D. MacLeod, M. Todd, and Y. Wang, 2021: *Prediction skill of Sahelian heatwaves out to subseasonal lead times and importance of atmospheric tropical modes of variability*. *Clim Dyn*, <https://doi.org/10.1007/s00382-021-05726-8>.