



Multidecadal modulation of ENSO teleconnection with Europe in CMIP5 models

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Many studies point to a robust ENSO signature on the North Atlantic European (NAE) sector associated with a downstream effect of Rossby wavetrains.

Some of these works also address a non-stationary behaviour of the aforementioned link, but only few have explored the possible modulating factors.

In this study the internal causes within the ocean-atmosphere coupled system influencing the ENSO teleconnection with the EuroMediterranean rainfall, have been analysed.

To this aim, unforced long-term preindustrial control simulations from 18 different CMIP5 models have been used. A non-stationary impact of ENSO on EuroMediterranean rainfall,

being spatially consistent with the observational one, is found. This variable feature is explained by a changing ENSO-related Rossby wave propagation from the tropical Pacific

to the NAE sector, which, in turn, is modulated by multidecadal variability of the climatological jet streams associated with the underlying Sea Surface Temperature (SST).

Our results point, therefore, to a modulation of the ENSO-EuroMediterranean rainfall teleconnection by the internal (and multidecadal) variability of the ocean-atmosphere coupled system.