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Important role of the North Atlantic Ocean for West Asian climate in a last millennium simulation with the EC-Earth model

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West Asia (WA) or politically referred to as Middle East is among the most vulnerable regions to the ongoing climate change, but has not received much attention. In the past decades, the region has confronted severe droughts caused by a combination of both internal climate variability and anthropogenic warming. Therefore, distinguishing the impacts of internal and forced climate variability on temperature and precipitation of this region deserves more attention. To better understand the climate variability, transient paleo-climate simulations are useful as they provide longer timeseries than instrumental records. Here, we focus on WA climate variability by using the last millennium transient simulation of the EC-Earth (v3.1) global earth system model. In the first part of our analysis, we discuss the simulated climate during the Medieval Climate Anomaly (MCA; CE 950–1250), the Little Ice Age (LIA; CE 1450-1850), and the period in between (CE 1250-1450). We find that the difference in sea-surface temperature (SST) of the North Atlantic Ocean between LIA and MCA strongly contribute to the precipitation change over WA by affecting one of the dominant modes of Northern Hemisphere extratropical atmospheric circulation i.e. circumglobal teleconnection pattern. In the second part of our analysis, we focus on the decadal-to-multidecadal variability of the WA climate and demonstrate the key role of North Atlantic Ocean SST, in particular over the subpolar gyre. Finally, we provide the implications of our results for WA climate variability in present-day.