



Early winter cold spells over the Euro-Mediterranean region

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In a changing climate context, temperature extremes are expected to heavily impact societies and economies. Projected changes in warm extremes have been extensively investigated, while less efforts are devoted to cold extremes. Despite the projected warming of the climate system, cold extremes could still occur and have an impact on several sectors, such as human health and agriculture. Here, we focus on cold spells that have a potential high impact, i.e. early winter cold spells occurring after a mild-to-warm autumn. Projected changes of these events over the Euro-Mediterranean region are analysed by using the latest Euro-Cordex simulations under the scenarios RCP4.5 and RCP8.5.

In terms of spatial extension of cold spells, a significant reduction can be seen only at the end of the 21st century and under the RCP8.5 scenario. As for the changes in intensity in the mid-century, no consistency is found among models over large areas. At the end of the century, the north-eastern part of the domain and northern Africa are projected to be early-cold-spell free under the RCP4.5 scenario, while, almost the entire domain is projected to be early-cold-spell free under the RCP8.5 scenario.