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Projections of the Fire Weather Index (FWI) using CORDEX-CORE simulations

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Changes in global fire activity are influenced by a multitude of factors including land-cover change, policies, and climatic conditions. In this study we focus our attention on climate, investigating how relative humidity, wind, temperature and precipitation changes can act together in fire danger. Within the CORDEX-CORE initiative, two regional climate models (RCM) have been used at 0.22° resolution and to downscale 3 global climate models (GCMs) from the CMIP5 project. The analysis is carried out over 9 CORDEX domains for two climate scenarios namely the RCP2.6 and the RCP8.5. The high resolution regional climate simulations have been used to evaluate changes in the fire danger by means of the Fire Weather Index (FWI). The attention is focused on the Mediterranean Basin and in South America, as well as in Australia and in the North America domains. Both climate scenarios show similar projections for the near future time slice (2031-2050) with an increase of the index in those areas that are already affected by seasonal fires such as Spain and Southern Italy for the Mediterranean Basin and the central band of Brazil. For the future time slice (2081-2100) the signal increases, and it is stronger for the RCP8.5 scenario in all regions as expected.