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Future convective weather risks in Europe and Near East

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IPCC's fifth Assesstment Report suggests a number of representative greenhouse gas concentration pathways (RCPs) for the next century, ranging from 2.6 to 8.5 W/m2 (to be added to pre-industrial values of radiative forcing). Recent climatologies of severe convective weather phenomena, and their environmental characteristics provide a base for building an insight for anticipating future convective risks, using data from the climate scenarios. The presentation will focus on evolution of the frequency of convection, and relevant hazards, e.g. excessive precipitation, and severe straight-line winds over a large domain covering Europe and Near East, following RCP4.5 and RCP8.5. The investigation is performed for time slices of 2021-2050 and 2071-2100 periods, using regional climate model data. In addition to the convective precipitation and surface wind speed output, severe convection and relevant hazards are examined using selected environmental parameters (i.e. thermodynamics and kinematics) in the coarse and fine resolution data, favouring such phenomena.