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Simulated hailstorms in Switzerland in current climate and in climate change conditions: case studies.

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Thunderstorms are damaging phenomena whose expected evolution with climate change is uncertain. Spring- and summertime hailstorms over Switzerland were generated in convection-permitting simulations with the Advanced Research Weather Research and Forecasting (ARW-WRF) model in the current climate conditions and under presumed climate change conditions towards the end of the XXI century (RCP 8.5 scenario), using the surrogate climate change approach.
Several of the most interesting hailstorm cases have been analyzed and the simulated storms in both current and future climate conditions have been compared with radar observations and observer reports from the European Severe Weather Database (ESWD). The modification of hailstorm intensity, size, and quantity, as well as changes of the hailstorm initiation locations and trajectories has been studied.