Spatial characterisation of hailstorms in Europe using radar data

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The accurate characterisation of individual hailstorms in space and time can be used to enhance the modelling of the risks associated with severe convective storms.

Different methods are used to identify hail storms in radar data ranging from space-time clustering to complex tracking algorithms that take additional information like wind speed and direction into account.

We compare a range of spatiotemporal clustering and cell tracking techniques using data from Storm Andreas in Germany in July 2013.

We then analyse six years of pan-European single-polarisation radar reflectivity data (the OPERA archive) to identify both hail swaths and streaks, and calculate spatial and temporal statistics.

Finally, the results are compared to results from the literature.