

Forensic meteorology. A field survey methodology proposal for wind assessment

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Local strong-convective winds like tornadoes and downbursts are events that happen hundreds of times each year in Europe, often causing substantial social impact, economic losses and even loss of lives. However, it is always tricky to determine if certain local wind damages have been caused by a tornado, a downburst or some other weather phenomena, particularly for weak cases and in the absence of a direct witness. A careful field survey is strongly recommended in order to determine the type of phenomenon and to characterize features like damage path length and width, as well as wind intensity.

The authors have carried out far more than a hundred field surveys in the last fifteen years. Based on their experience, and aiming to homogeneous and systematic strong-convective winds damage field surveys, a methodology is proposed. It starts with decision making and visit planning, as well as equipment needed, and continues with collection of testimonies, delimitation of the affected area and geolocation of damages and of any other hints and traces.

Finally, expected deliverables from the field work are: (i) a report that summarizes the visit and the information collected; (ii) a map with damage location marks, including associated photographs, and (iii) a summary table of all the damages identified. The proposed methodology aims at contributing to build and maintain homogeneous and complete databases of severe weather events allowing for consistent climatological studies and long-term analysis.