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The European Severe Weather Database (ESWD) - Design, Quality-Control and Applications

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The main goal of the European Severe Weather Database, ESWD, is to gather detailed and quality-controlled information on severe weather events (e.g. flash floods, hail, straight-line winds, tornadoes) all over Europe in a uniform data format and a web-based user-interface (www.eswd.eu) where both the public and collaborating national weather services (NMHS) can contribute and retrieve observations. Involving the public helps to raise completeness of the ESWD data significantly.

ESWD development was based on the fact that severe convective weather events strongly depend on micro- and mesoscale atmospheric conditions, and in spite of the threat they pose to people and property, they usually escape the meshes of existing operational monitoring networks. Besides, such events are often embedded in systems acting on a larger scale, and even if damage is local, severe weather can continue for hours or days and affect more than one European country during its lifespan.

The database is maintained and developed by the non-profit research organisation European Severe Storms Laboratory, ESSL (www.essl.org). Operational ESWD service started in 2006, after a two-year test phase. By now, three NMHS are collaborating: DWD, INM and ZAMG. Currently, the following phenomena are included in the ESWD: Straight-line winds, tornadoes, large hail, heavy precipitation, funnel clouds, gustnadoes, and lesser whirlwinds. Extending both the NMHS collaboration, private-sector ESWD data reuse, and the range of covered phenomena are further objectives.

Our presentation will first review the ESWD design and the quality-control experiences gained during two years of its operational availability, and then outline the op-

portunities for collaboration for various user groups from the private sector, research and NMHS. The ESWD database already contributes to ongoing severe weather research projects, like RegioExAKT (www.regioexakt.de) in Germany, and the talk will briefly present results from these activities.