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Conference on European Tornadoes and Severe Storms

Tornadoes in Germany

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Tornadoes in Germany are not as rare as commonly believed by the public opinion in this country. Strong tornadoes, however, only occur very seldom and many of the weaker events mainly lead to uprooted trees in forests. So up to now since the work of Wegener (1917), little attempt has been made to obtain reliable statistical information on the spatial and temporal distribution of tornadoes in Germany. Such statistics would be valuable both from a scientific and an economical standpoint as well. As tornadoes only affect a small area and yet even weak tornadoes have a high potential of damaging buildings, trees and even causing fatalities it is difficult to estimate the risk of a tornado impact per unit area and unit time without clear knowledge of the general tornado frequency for a certain country.

During the past years a record of about 400 tornadic storm events in Germany has been created from various sources, such as earlier statistics reported in the literature, inquiries at forest authorities and by grouping the community of German tornado research to form the tri-state network TorDACH which also includes tornado research in Austria and Switzerland. The main findings to be presented with an overview of the present statistics at the conference are the following:

- by now the data on German tornados allow for a meaningful statistical evaluation. However, for some periods of time (World War I and II) and regions (East Germany during the Cold War era) the data are still incomplete and require further research.

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- as a climatological average, 2 to 5 tornadoes per year can be expected in Germany. The variation in the data is large: years without reported cases contrast with years in which about 10 tornadoes were observed.
- the tornado risk in Germany amounts to about 0.1 cases per year and per 10,000 square km, a value found for Austria and Switzerland as well.
- the high topographical variability in Germany leads to some typical regions and synoptic situations of tornado occurrence and the formation of so-called tornado alleys.

Reference:

Wegener A., 1917: Wind- und Wasserhosen in Europa;
Vieweg, Braunschweig, 301 pp.