



Analysis of lightning flash characteristics in Central Europe

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Lightning pose a significant threat to life, property and economy. Hence, the detailed knowledge of the occurrence of lightning and its characteristics is important. A better knowledge of lightning characteristics helps understanding the effects responsible for cloud electrification. An improved understanding will lead to better detection and forecasting of lightning.

The characteristics of lightning in Germany and neighbouring areas measured by the Lightning detection NETWORK LINET are presented. Especially, the following stroke attributes are studied: type (cloud-to-ground (CG) and intra-cloud (IC)), height, polarity, amplitude. Several statistics of these stroke attributes are presented. Only a few are mentioned here: the amplitude show higher average values of CG (cloud-to-ground) versus IC (intra-cloud) strokes; the IC height has a Gaussian distribution with an average around 8 km.

Furthermore, the multiplicity of lightning flashes (the number of strokes within a flash) is analysed along with the characteristics of the strokes within a flash. These analyses reveal interesting flash characteristics, e.g. the average amplitude of all strokes within a flash of high multiplicity is larger than the average stroke amplitude of flashes with low multiplicity.