



On the conditions for winter lightning occurrence at the Eagle Nest Tower (2,537 m asl, eastern Pyrenees) during the Cerdanya-2017 field experiment

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The current study focuses on the analysis of two case studies (24 and 31 March 2017) where clusters of lightning flashes were observed at the Eagle Nest Tower (2,537 m asl) on the eastern Pyrenees (NE Spain). These storm episodes occurred during the Cerdanya-2017 field experiment (Bech et al. 2017), intended to study different meteorological processes highly influenced by complex terrain, including cold-pool formation and development. Relying on measurements from instruments specifically deployed for the Cerdanya-2017 campaign (i.e. Field-Mill, Micro Rain Radar, Microwave Radiometer), data from lightning location systems (SMC-LLS, Linet) and data from remote sensing (Meteosat satellite, SMC radar network); the conditions for the occurrence of those winter lightning have been analysed. Results suggest that winter storms can present favourable conditions for the occurrence of lightning on man-made structures on elevated spots like telecom towers in agreement with previous studies carried out in the area of study (Bech et al., 2013; Pineda et al., 2018). This research was partly funded by projects CGL2015-65627-C3-2-R and CGL2016-81828-REDT.

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