



Analysis of lightning activity over Central Europe for the period 2008-2014

Petra Mikus Jurkovic and Natasa Strelec Mahovic

Meteorological and Hydrological Service of Croatia, Zagreb, Croatia (petra.mikus@cirus.dhz.hr)

Analysis of lightning activity for the period 2008-2014 is done using the lightning data provided by the LINET (International Lightning Detection Network in Europe) network. LINET network detects total lightning discharge, but it also separately detects cloud-to-ground (CG) and intra-cloud (IC) strokes. For every stroke event, the LINET data provide details about polarity of the stroke, lightning current and emission height of the IC stroke. Detection efficiency of LINET sensors is very high, enabling detection of strokes with currents below 5 kA. The discharge locations are detected with the accuracy better than ± 150 m, but the sensitivity of sensors decreases as the distances of the lightning strokes from the LINET sensors increase.

The lightning analysis is performed for central European region from 6°E 38°N to 21°E 50°N , along with more detailed analysis of lightning statistics over the areas of interest. Spatial and temporal distribution of lightning activity, but also annual and monthly variations of lightning density over the studied region are presented. The analysis indicates the lightning "hot spots", areas where thunderstorms are more frequent. Also, according to the results, lightning activity is weaker over the sea and certain mountainous areas. Along the coastline large number of lightning strokes is detected, especially during the autumn. The temporal analysis shows a preferred daytime convective activity over the inland, while the nocturnal convection occurs more frequently along the coastline and over the sea.

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