



Comparison of Lightning Data from PERUN and LINET in Poland

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Lightning detection networks have reached a high quality level and the collected data can be utilized for both meteorological and technically oriented tasks, with the inclusion of issues related to lightning protection and assessment of lightning-induced damage. Nevertheless, improvements are often needed, mainly with respect to full spatial coverage of a country, detection efficiency and location accuracy. A further problem concerns the reliable discrimination between cloud-to-ground strokes (CG) and cloud discharges (IC).

Lightning detection in Poland is performed by means of a SAFIR system (PERUN), which became operational in 2001 and archives all data. The limited number of 9 sensor sites, though, leads to shortcomings as noted above. A new network has been installed which started continuous real-time operation in May 2006. It is a LINET VLF/LF system which covers entire Poland with an initial set-up of 5 sensors, complemented by LINET sensors positioned in surrounding countries. LINET allows determination of both CG and IC with high detection efficiency and, thus, provides 'total lightning' to a degree otherwise accessible only by simultaneous implementation of VLF and VHF networks, just as is realized by PERUN.

In the present contribution a variety of lightning parameters measured for thunderstorms occurring during summer 2006 in Poland will be scrutinized. We compare lightning maps from the two networks and find that LINET cells tend to be more compact than PERUN cells even when LINET reports more events. For time-coincident signals both location differences and, for CG strokes, current amplitudes are investigated. Currents above ~ 25 kA agree well in both networks, but LINET reports more weaker signals. The time-evolution of lightning events is determined and both net-

works show the same trends; LINET reports the onset of lightning as early as PERUN. Further investigations are planned after completion of the LINET sensor configuration.