



Severe weather detection by using Japanese Total Lightning Network

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In this paper we demonstrate the preliminary results from the first Japanese Total Lightning Network. The University of Electro-Communications (UEC) recently deployed Earth Networks Total Lightning System over Japan to conduct various lightning research projects. Here we analyzed the total lightning data in relation with 10 severe events such as gust fronts and tornadoes occurred in 2014 in mainland Japan. For the analysis of these events, lightning jump algorithm was used to identify the increase of the flash rate in prior to the severe weather events. We found that lightning jumps associated with significant increasing lightning activities for total lightning and IC clearly indicate the severe weather occurrence than those for CGs.