Performance Comparison between Different Lightning Datasets during CHUVA Campaign

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From Nov. 2011 to Mar. 2012, we compared lightning data from the Brazilian Total Lightning Network (BTLN), World Wide Lightning Location Network (WWLLN) and other lightning networks in the CHUVA region, which is centered at Sao Paulo, Brazil with a radius of 666 km. A 0.5° box in latitude and longitude and 2 ms time window was used as the criteria. Assuming BTLN observed most of the lightning strokes in this region, we calculated the detection efficiency of the other networks. Also, we compared the difference of detection efficiency on land and on ocean among these networks. For the location accuracy, we found that most of the networks give the same result, but some showed an obvious offset. The peak current detected by different networks was also compared, including Cloud-to-Ground and In-Cloud lightning. At last, we calculated the relation between VLF energy (WWLLN) and the peak current (BTLN), which is found to be a relationship similar to that result found in the in the USA.