



## **Evaluation of the ZEUS Global Lightning Monitoring Network Expansion**

**C. A. Morales** (1) and E.N. Anagnostou (2)

(1) Universidade de São Paulo – USP, Brazil, (2) University of Connecticut – USA  
(morales@model.iag.usp.br)

This paper presents the evaluation of the location error accuracy and the detection efficiency of VLF lightning detection network (ZEUS) that has been expanded with 3 new more receivers in the Caribbean and in Brazil in the first semester of 2006. Previous studies on the ZEUS system (2003 and 2004) over Brazil, when only 11 antennas were installed in the European and African continents, showed that ZEUS had 62.84 km location accuracy with standard deviation of 21.49 km and a detection efficiency of 25.44 during the night and 2.25 during daytime over Brazil. With the introduction of 3 new receivers in Guadeloupe (Caribbean), São Paulo and Fortaleza (Brazil), the theoretical results show that the location accuracy should be less than 10-15 km, and the nighttime detection efficiency should be above 80% in most of the South America. During the presentation, new results will be present for the ZEUS new configuration measured during August-November of 2006. In this analysis, ZEUS will be compared to the measurements made by the TRMM-LIS sensor and the Brazilian lightning detection network (RINDAT), therefore it will be possible to present the performance of ZEUS over South America and Africa, as well as in the Atlantic ocean.