

REVIEW OF CHARACTERISTICS OF ELECTRIC FIELD PRIOR TO LIGHTNING

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Abstract: A study on the atmospheric electric fields prior to lightning strike was conducted by means of literature survey and data analysis. Study of electric fields is an important tool of lightning research. Electric field mills are used to observe static atmospheric electric fields during fair weather and during storm conditions. Comparisons show significant changes in electric field due to an approaching storm or a thunderstorm. Attempts to comprehend the variations prior to and after a strike has been done by observatories all over and this paper focuses on identifying characteristic changes in atmospheric electric field prior to a lightning strike. The focus is on static electric field variations prior to strike and this points out to the significance of study of electric field varying from a fair weather scenario to generation of bipolar preliminary breakdown pulses which is defined as the dynamic electrical activity inside cloud before strike. It has been explained by means of BIL (Breakdown Intermediate Leader) model as proposed by Clarence and Malan. Simulation experiments done by Carlson and Liang are seen to reproduce the same characteristics as obtained from field data. This paper helps in identifying the characteristic change in atmospheric electric field prior to lightning strike can create a great advantage in lightning prediction.

Keywords: Lightning, Electric field , Prior to strike