

ON A WIDE BAND CRDF FOR ATMOSPHERICS

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In order to study the polarization errors of the CRDF for atmospherics under the condition free from the ringing effect of the tuned circuit, a CRDF of wide band type has been constructed. This CRDF consists of crossed loop antennas of triangle type, pre-amplifiers, main-amplifiers, a goniometer for rotating the directivity of the antenna, CRT displays and a wave form recorder for photographing the respective wave form of the output of three channels. Each antenna measures 15 meters in height, 20 meters at the base and is wound with 2 turns at intervals of 10 centi-meters by PVC wire of 5.5 square millimeters. The receiving frequency band of this CRDF ranges 1kc to 100kc. Moreover, another channel for a vertical antenna is added to study the incidental angle of atmospherics. And to rotate the directivity of the antenna system and facilitate the analysis of the Lissajous' figure of atmospherics, a goniometer constructed from a dual sine-cosine potentiometer is inserted between two channels for indicating the arrival direction of atmospherics. The wave forms of three channels can be photographed to make the varing sequence of the Lissajous' figure clear. This wave form recorder of three channels consists of a three channel retardation circuit using a time division system, a time sweep generator and a brilliance modulation circuit. This wide band CRDF is under adjustment and will be used with a mobile observing station for the study of the errors of the CRDF.