

Section 5 Atmospheric Radio Noise

The collection of raw data for our research has been made at Toyokawa and Imaichi. Some of the relevant results are given below:

1. At Toyokawa the radio noise (at 50 kHz) of a given short duration has been repeatedly analysed with help of the digital computer, yielding the amplitude probability distribution, crossing rate distribution, probability distribution of duration, probability distribution of the occurrence time interval between pulses. Such an analysis is expected to lead one to a better understanding of the relationship between the different statistical parameters.

2. Preliminary tests on a lightning counter tuned to 90 kHz have shown that it is sensitive to the storms which have centers within about 200 km from the counter.

3. Some preliminary observations of thunders have yielded some interesting results relating to the pearl type thunder etc. and the relation between the pearl thunder and the lightning channel character is to be investigated.

4. Radiation from cloud discharges has been observed with three VHF receivers each with a directional antenna, and the data analysis shows that a tree-like structure is expected of the observed lightning channel in the cloud.

5. Using a receiver tuned to 3 kHz with a band width of 460 Hz, the statistical measurement of the vertical field changes due to near sources have been made.

Observations of atmospheric noise on a cooperative basis with Heinrich-Hertz-Institut in Berlin are expected to begin from the summer of 1970. (Dec. 1, 1969)

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