# Atmospheric Electrical Measurements in the Hawaiian Islands*

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## *Abstract*

An exploration of the electrical properties of the atmosphere on and above the island of Hawaii, as indicated by a portable corona current unit, is described. A 30 foot telescopic mast having a radioactive probe mounted on an insulated bushing and connected by shielded cable to a sensitive microammeter was used. Corona currents were measured at a number of geographic locations ranging from sea level under conditions of heavy surf to the 10,000 foot level on Mauna Kea several thousand feet above the exchange layer, and over the land and ocean in a light plane. Observations were made under clear, cloudy and rainy conditions. Fair weather and cloudy conditions gave currents from air to earth of positive sign. With warm rain falling the currents had a negative sign and increased in value with intensity of precipitation. In several instances indications of incipient discharges similar to that observed in mild lightningstorms were noted.

The island of Hawaii has many desirable features to recommend it for an extensive research program in atmospheric electricity. A simple and inexpensive approach to inaugurating such a program is suggested.

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