

Charging of the impedance-probe by the electron-beam emitted from the sounding rocket

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Charging of the metallic electrode caused by the electron-beam which was emitted from the sounding rocket to the space was observed in the frequency spectra of the impedance-probe. This negative charging ($dQ=dI \cdot dT$) was estimated from both the injected electron-beam current (dI) to the probe surface and the charging duration (dT) by the electron beam. The probe potential (V) was negatively biased to the level of dQ/C_{po} . C_{po} is the probe capacitance in the vacuum.