WEDNESDAY AFTERNOON, 17 NOVEMBER 1971 LAKESHORE ROOM, ALUMNI HOUSE AT 2:00 P.M.
(G. E. KNORR presiding)

Astrophysical and Geophysical Plasmas

Invited Papers

6B 1, 6B 2, 6B 3 Plasma Effects in Pulsars. R. M. KULSRUD, *Princeton University*.

6B 4, 6B 5, 6B 6 Parametric Heating in the Ionosphere—Experiments and Theory. F. W. PERKINS, *Princeton University*.

Contributed Papers

6B8 Laboratory Simulation of Artificial Plasma Clouds in the Ionosphere.* D. L. MORSE, AND W. W. DESTLER, Laboratory of Plasma Studies, Cornell University.--Results of an experiment to simulate in the laboratory the behavior of artificial plasma clouds in the ionosphere are reported. Plasma is formed in a theta-pinch type plasma gun, and injected into a large vacuum chamber transverse to an applied magnetic field. The resulting plasma cloud is observed to drift across the field, diffuse, and frequently develop field-aligned structure or "striations." Neutral particles are accelerated by charge transfer collisions in the gun region and stream through the plasma cloud as it is slowed by the transverse magnetic field. The ratio of ion density to neutral density is 10% or less, and the product of the ion-neutral collision time and the ion gyro frequency is greater than 10. The pressure ratio β is less than 0.03. Results are compared with theories predicting the formation of striations in ionized clouds.

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