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The many comments by Dr. Joseph Slepian under the above title about constant in space and time are not applicable to this review. In the text following Eq. (1) and Eq. (2), it is stated that these equations apply to "an infinite plane geometry", meaning that E and B are indeed constant in space and time. For the rest of the paper we consider a cylindrical geometry and thus Eq. (3) contains a centrifugal-force term. Equation (1) is now replaced by Eq. (4) which applies to a cylindrical geometry, and the latter equation is used in the rest of the discussion. The centrifugal force is not a correction as stated by Dr. Slepian; it is a force which must appear in the equation of motion.

The current density of Eq. (6) is called diamagnetic because it decreases the magnetic field in the central region.

The second half of Dr. Slepian's note is a discussion of the radial plasma drift caused by ion-electron collisions. This effect has been recognized and discussed by the Los Alamos[1] and Berkeley[2] groups, whose numerical estimates show the plasma drift time to be of the order of several hundred microseconds, so that the radial velocity is small compared to the rotational velocity.

For a more detailed discussion of the theory sketched in the review paper, the original sources cited therein should be consulted.

References

1. K. Boyer, J. E. Hammel, C. L. Longmire, D. Nagle, F. L. Ribe, and W. B. Riesenfeld, Proceedings of the Second International Conference on the Peaceful Uses of Atomic Energy, Geneva, 1958 (United Nations, New York, 1958), Vol. 31, p. 319.

2. W. R. Baker, A. Bratenahl, A. W. DeSilva, and W. B. Kunkel, Viscous Effects in Highly Ionized Rotating Plasmas, UCRL-8861, August 11, 1959; to be published in Proc. Fourth International Conference on Ionization Phenomena in Gases (Uppsala, Sweden, 1959).