

Abstract Submitted
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Characterization of a Class of Stellarator Steady States¹ HAROLD WEITZNER, Courant Institute of Mathematical Sciences, New York University — For a specific class of stellarator appropriate magnetic fields the coupled ion-electron Fokker-Planck equations are solved by a formal expansion in the small Larmor radius parameters. A system of relatively simple ordinary differential equations is given to determine the plasma profile functions, number density, temperature, and electrostatic potential. A low collisionality ordering is used. The magnetic field has stellarator symmetry of N periods in the toroidal direction and is approximated by a closed magnetic line configuration with rotational transform N/R . The magnetic field is approximately quasisymmetric. Finally a small additional field is included which leads to a field without flux surfaces.

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