

Abstract Submitted  
for the DPP09 Meeting of  
The American Physical Society

**Transport in a stellarator with imperfect flux surfaces and quasisymmetry**<sup>1</sup> HAROLD WEITZNER, New York University, Courant Institute Mathematical Sciences — With the use of techniques developed in Refs. [1] it is possible to study low shear stellarator steady states. A steady state near a magnetic field with flux surfaces and approximate quasisymmetry is modified by the addition of small magnetic fields restricted only by the condition that the perturbation preserve the underlying stellarator symmetry. The perturbations constrain the profile functions of the electrons and ions. Equations for the profile functions are given and a simple model of a linearized collision operator is used to obtain further results.

[1] Phys. Plasmas 1, 3942 (1994); 4, 575 (1997); and 5, 417 (1998).

<sup>1</sup>This work is supported by U.S. Dept. of Energy Grant No. DE-FG02-86ER53223.

Harold Weitzner  
New York University, Courant Institute Mathematical Sciences

Date submitted: 14 Jul 2009

Electronic form version 1.4