

Abstract Submitted
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General transport theory for a magnetized plasma in general magnetic geometry¹ JEONG-YOUNG JI, MUKTA SHARMA, ERIC D. HELD, Utah State University — From linearized general moment equations, general transport equations are derived for a magnetized plasma in general magnetic geometry. The moment equations are not derived from the drift kinetic equation but from the full moment equations² with the small-Larmor-radius ordering. The transport equations appear in integral form of parallel and perpendicular thermodynamic drives. In the existence of nested flux surfaces, the general transport theory is compared with neoclassical transport theory. The nonlinear couplings of parallel moments to magnetic field gradient and thermodynamic drives are also discussed.

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²J.-Y. Ji and E. D. Held, Phys. Plasmas **15**, 102101 (2008).

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