

Abstract Submitted
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An MHD-integrated model for impurity and core transport studies in RFP plasmas I. PREDEBON, R. PACCAGNELLA, M.E. PUIATTI, M. VALISA, Consorzio RFX, Associazione Euratom-ENEA sulla Fusione, Padova, Italy — We present a 1D numerical tool for the study of core transport in the Reversed Field Pinch, built with a self-consistent MHD model. The code solves the safety factor evolution assuming an Ohm's law with an α -dynamo term and a Spitzer's like resistivity; the MHD equations are coupled with continuity and heat balance equations; part of the code RITM¹ has been integrated so as to compute the neutral and impurity related terms in the main gas equations. The code has been conceived in order to allow the inclusion of various transport models. As a first case, to simulate the chaotic multiple-helicity configuration, typical of low current/high density plasmas, a stochastic model has been implemented with the inclusion of collisionality. Some examples are shown, concerning the effect of strong density variations on the discharge sustainment. The role of the dynamo and the incompatibility of the resistivity with a pure Spitzer's law are discussed.

¹M. Z. Tokar, *Plasma Phys. Control. Fusion* **36**, 1819 (1994)

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