

Abstract Submitted  
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**Development of a reduced model for resonant fast ion transport in TRANSP**<sup>1</sup> MARIO PODESTA, M. GORELENKOVA, R.B. WHITE, PPPL — A new reduced fast ion transport model that captures the physics of resonant wave-particle interaction is being developed for the tokamak transport code TRANSP. The model is based on a probability distribution function to reproduce changes in phase space coordinates (energy, toroidal canonical momentum and possibly magnetic moment) of fast ions interacting with a given set of instabilities. The probability function can be derived from analytical theories as well as from particle-following codes such as ORBIT or SPIRAL. The basic principles of the new model and the progress in its implementation in TRANSP will be reported. Examples of the initial verification of the model for a specific NSTX scenario with multiple unstable Toroidal Alfvén Eigenmodes, leading to enhanced fast ion transport, will be then discussed.

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Mario Podesta  
PPPL

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