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## **TH/P6-13: Kinetic Integrated Modeling of Burning Plasmas in Tokamaks**

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In order to self-consistently describe the behavior of burning plasmas in the presence of energetic particles, we have been developing a kinetic integrated tokamak modeling code TASK3G. This modeling is based on the behavior of the momentum distribution function of each particle species. The time evolution of the momentum distribution function is described by an advanced Fokker-Planck component TASK/FP and the influence of energetic particles on global stability is studied by a full wave component TASK/WM. The start up of ITER plasmas with multi-scheme heating and current drive is studied including radial transport and fusion reaction rate calculated from the momentum distribution function. We have confirmed that the momentum dependence of the radial diffusion coefficients strongly affects the profiles of energetic ions and fusion output power. The linear stability of global eigen modes in the presence of energetic particles is also discussed.

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