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Interaction between fast particles and magnetohydrodymanical waves in the presence of toroidal flow[1] J.W.S. BLOKLAND, FOM Institute for Plasma Physics Rijnhuizen, Assocation EURATOM-FOM, Nieuwegein, The Netherlands, S.D. PINCHES, EURATOM/UKAEA Fusion Association, Culham Science Centre, Culham, Abingdon, OX14 3DB, United Kingdom — In many tokamak experiments, neutral beam injection is used for additional heating. The injected particles induce a net rotation on the plasma. This rotation plays an important role in the stability and in the interaction between the fast particles and the bulk plasma. However, in the next generation tokamaks the plasma will most likely rotate significantly slower and therefore the influence of the rotation in present devices needs to be investigated in detail. We present a fully consistent model of the bulk plasma, the fast particles and their interaction. The bulk is described by the MHD equations, whilst for the fast particles a kinetic description is used. The equilibria are computed using the FINESSE code and their stability is analysed using the PHOENIX code. Both codes take toroidal flow into account. The HAGIS code, extended with toroidal flow, is used to simulate the fast particles. Tests of the model against experimental data from various tokamaks including MAST will be presented.

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