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Can we study the transport of MeV ions without generating fusion alphas? ISTVAN PUSZTAI, Chalmers University of Technology, Applied Physics, GEORGE WILKIE, University of Maryland, YEVGEN KAZAKOV, LPP-ERM/KMS, TÜNDE FÜLÖP, Chalmers University of Technology, Applied Physics — The novel ion cyclotron resonance heating method, utilizing three ion species, allows the generation of energetic trace minorities in the MeV range [Ye. O. Kazakov et al., 2015, Nucl. Fusion 55, 032001]. We survey which aspects of alpha particle transport may be accessed experimentally without D-T operation, such as during the non-activated phase of ITER, through a numerical investigation of the transport properties of RF heated ^{3}He resonant ions in a $^4\mathrm{He} - \mathrm{H}$ mixture plasma. The turbulent transport is simulated using the recently developed version of the gyrokinetic code GS2 that can handle strongly non-Maxwellian species [G. J. Wilkie et al., 2015, J. Plasma Phys. 81, 905810306], while the collisional transport is studied taking the temperature anisotropy of the ^{3}He species into account.

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