

Turbulent Transport of Energetic Particles by Microturbulence

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The effect of microscopic ion-temperature-gradient (ITG) turbulence on energetic particles transport is studied in the large scale gyrokinetic particle simulations using GTC. Diffusivity dependence of the energetic particles on the particle energy and pitch-angle has been obtained. It is shown that diffusivity of energetic particles with energy higher than an order of magnitude of electron temperature can be neglected. The probability distribution function (PDF) for the radial displacement Δr is found to be very close to a Gaussian, which indicates a diffusive process.