

A New Numerical Method to Compute the Transport Coefficient and its application to the particle transport of low-n MHD modes in Tokamak

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A new method, integrating along the full orbit, to compute the transport coefficient has been proposed, which may be applied to the nonlinear regime of turbulence [1]. Low-n MHD modes can affect the transport of energetic ions in Tokamak [2-5]. The numerical computation method of transport coefficient is developed based on the theory [1], which is applied to the magnetic stochastic field and the result is consistent with the quasi-linear one [6] as Fig.1 shows. The method is also used to study the transport of energetic ions in the rotational magnetic islands in Tokamak and the result is consistent with previous one [5].

ferences

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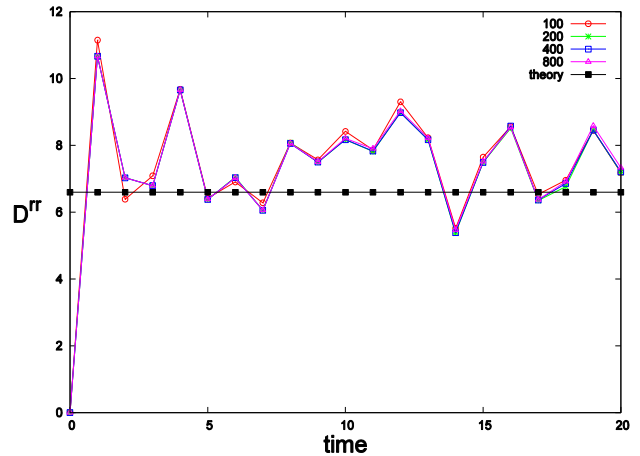


Fig.1 Black is the quasi-linear result. Others are different numbers of theta-average given by the new method.