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Particle Transport Induced by Magnetic Perturbation Including the Drift-Orbit Effect in Tokamak

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The particle transport induced by magnetic perturbation including the drift-orbit effect is studied. In Ref. [1] it is pointed out that the magnetic-perturbation-induced particle transport can be reduced by the orbit drift when the orbit width is larger than the magnetic perturbation mode width. We deliver a clear physical image to understand the transport reduction. The resonant condition is obtained from the quasi-linear calculation [2]. And the transport reduction is caused by the reduction of resonant time due to orbit drift. The orbit simulation is consistent with the quasi-linear calculation.

References
[1]J. R. Myra and Peter J. Catto, Physics of Fluids B 5, 1160 (1993).
[2]Shaojie. Wang, Physics of Plasmas 23, 022303 (2016)