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Scattering Spectrum from Magnetic Island Separatrix in Tokamak

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Abstract:

The scattering spectrum form was calculated in a tokamak plasma which is around magnetic island separatrix surface region. The spectrum form is driven from kinetic equation, the longitudinal approximation is used, the ambipolar diffusion electric field caused by the magnetic island transport is considered. The result is similar to the magnetized case, but under other conditions, they give rise to a distinctive modulation, it provide a theoretical basis for the diagnosis of magnetic island scattering which caused by ambipolar diffusion electric field.