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## Neutral Recycling Effect on Edge ITG Turbulence and Transport

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Neutral particle recycling effect on the edge ITG (ion temperature gradient) turbulence has been studied in a realistic tokamak geometry with a steep edge pedestal, using a full-f edge gyrokinetic code XGC1. The ITG turbulence is chosen here because it is the most fundamental and robust form of tokamak plasma instability, with its long radial correlation length influencing other turbulence in the pedestal. It has been found that the charge exchange interaction of the neutral particles with the plasma ions enhance the edge ITG turbulence and transport through a) reduction of the ExB shearing rate and b) through cooling of the ion temperature near the magnetic separatrix, which leads to an enhanced ion temperature gradient in the extended edge region.

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