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Effects of magnetic islands on drift wave instability PENG JIANG, Graduate Student — Static magnetic islands have been added into GTC (gyrokinetic toroidal code) simulation of drift wave instability. First, we investigate the ion density flattening inside the islands in the absence of turbulence. We find that the density profile of the high field side has more flattening than that of the low field side. This phenomena is mainly due to the trapped ions in the low field side. After verification of the density profile change due to the static magnetic islands, the behavior of ion temperature gradient (ITG) in the presence of static magnetic islands is investigated in GTC simulation. It is shown that the island perturbation causes the toroidal mode coupling. The toroidal mode spectrum becomes broader in the presence of static magnetic islands.

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