GK simulations of ETG turbulence to clarify the characteristics of a turbulence-driven current in realistic toroidal plasmas.

ETG current density $j_{ETG}$ increases with $\rho_e^*$ owing to the gyro-Bohm scaling,

$$\langle j_{ETG} \rangle_{RMS} \sim \phi^2 \sim \rho_e^*.$$ 

In the large $\rho_e^*$ (= 1/2350) case, the perturbation on equilibrium q-profile becomes noticeable. A large change in magnetic shear ($s = 0.78 \rightarrow 1.13$) can impact on micro-instabilities.