

Global gyrokinetic particle simulations using the GTC code find that the trapped electron mode (TEM) can be driven unstable in regions with steep density gradient. The short wavelength fluctuations of TEM turbulence is found to be capable of driving a large electron heat flux without driving significant ion heat and particle fluxes. The properties of the TEM turbulence is studied using plasma parameters relevant to tokamak edge regions with high value of safety factor and short scale length of pressure gradients. The relative importance of zonal flow and GAM in regulating the turbulence will be clarified.