Recently, simulation study on L/H transition is performed using two-field model where the effects of the self-consistent neoclassical rotational damping on the radial electric field dynamics is taken into account [1-2]. It is shown that (1) increasing the input power leads to avalanches, triggering strong stabilizing zonal flows (ZFs), (2) the resulting steepening of the pressure gradient further generates a shear mean flow via the neoclassical friction, (3) the positive feedback loop between pressure gradient and poloidal flow by neoclassical terms gives rise to pedestal formation. This transition scenario may be applicable for internal transport barrier (ITB) formation. Therefore, we shall revisit our previous work to examine the neoclassical flow effect [3]. The model is given by

\[ \frac{dW}{dt} + ik_0 \kappa_c \phi = -AV_{\parallel}, v + \epsilon \omega_\parallel F - \rho^2 \mu \nabla^2 F + \rho \phi \frac{\partial}{\partial r} (\mu_w U_r), \]

\[ \frac{dv}{dt} = -AV_{\parallel}, F + 4\mu \nabla^2 v - \mu_w U_r = \frac{2\sqrt{\pi}}{5} \frac{A}{\sqrt{r}} |\nabla_t| v^3 + \frac{2A}{5} \nabla_t, \]

\[ \frac{3}{2} \left( \frac{dT}{dt} + \frac{1}{r} \frac{\partial}{\partial \theta} \right) - \frac{d\theta}{dt} + \kappa_c \frac{1}{r} \frac{\partial T}{\partial \theta} = \frac{5}{2\tau} \epsilon \omega_\parallel T + \chi T^2 \frac{\nabla_t}{T^2} \frac{2A}{5} \nabla_t, \]

where \( W = n - \rho^2 \nabla^2 F \), \( F = \phi + (n + T) / \tau \), \( n = \phi - \langle \phi \rangle \). The normalization: \( t / t_B \rightarrow t \), \( r / a \rightarrow r \), \( e \phi / T_e \rightarrow \phi \), \( v / c_s \rightarrow v \), \( T / T_B \rightarrow T \) is used for the system where \( c_s = (T_e / m_i)^{1/2} \) is the sound velocity and \( t_B = a^2 / \chi_B \), the Bohm time [4]. The neoclassical viscosities are given by [5]

\[ \mu_{nc} = \frac{0.66 e^{1/2} v_i}{(1 + 1.03 v_i^{1/2} + 0.31 v_i^2)(1 + 0.66 e^{3/2} v_i)}, \]

and \( \kappa_{nc} = \frac{1}{1 + v_i^2 e^3} \left( 1.17 - 0.35 v_i^{3/2} - 2.1 v_i^2 e^3 \right) \).

The poloidal flow is written as

\[ U_r = v + \rho \phi \frac{\partial F - \kappa_c \frac{\partial T}{\partial \theta}}{\epsilon}. \]

In the previous work, the neoclassical viscosities are fixed in time. However, the dynamical change of these viscosities is important for ITB formation, so that we have updated the code which is now enabled to treat quasi-linear modification of neoclassical viscosities. In addition, the effect of \( \kappa_{nc} \) in the poloidal flow was not considered in the previous work, so that we will investigate it. Figure 1(a) shows initial \( q \) profile and \( \kappa_T \) at \( r = 0.6 \). The saturation is obtained at \( t \sim 1.0 t_B \). Figure 1(b) shows the turbulent thermal flux and mean electric field at \( t = 2.0 t_B \). The detailed analysis will be shown.

Fig.1 (a) Equilibrium profiles (b) Turbulent thermal flux(blue) and mean electric field(red).