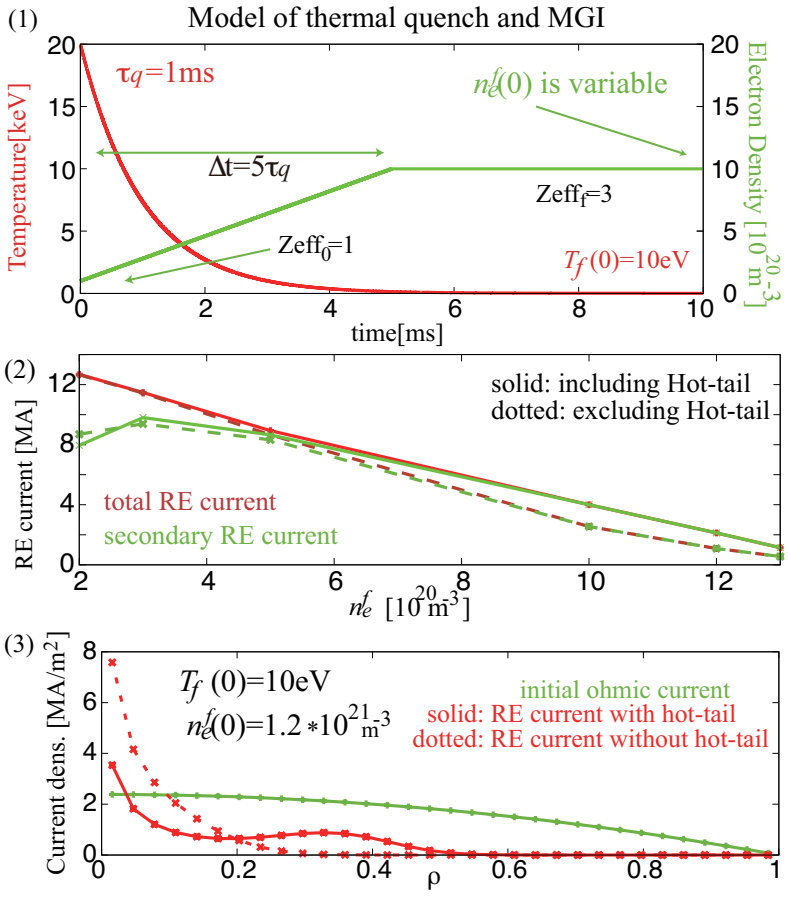
TH/P1-37: Simulations of Runaway Electron Generation including Hot-Tail Effect by H. NUGA *et al.*



- Contribution of the hot-tail effect, which arises from fast thermal quench, is studied using 2-D Fokker-Planck simulation for ITER parameters.
- High electron density achieved by MGI (modeled as Fig.1) suppresses the RE generation (Fig.2).
- In high density plasma ($n_e^f = 12 \times 10^{20}\mathrm{m}^{-3}$), the hot-tail effect enhances the primary RE generation ($3.3 \times 10^{-3}\mathrm{A} \rightarrow 1.4 \times 10^{-2}\mathrm{A}$) though magnitude is small.
- The avlanche effect, however, doubles the total RE current (1.09MA→ 2.12MA) in MGI region ($n_e^f = 12 \times 10^{20}\mathrm{m}^{-3}$). (Fig.2)
- Hot-tail effect broadens the radial profile of RE current density (Fig.3).

If τ_q is short, hot-tail effect may double the total RE current for high density plasma with MGI.