Sawtooth Driven Neoclassical Tearing Modes in HL-2A Plasmas[1]

XIAOGANG WANG, CHIJIE XIAO, Peking University, JIAQI WANG, Sichuan University, XIAOQUAN JI, YI LIU, Southwestern Institute of Physics —
The m/n=2/1 neoclassical tearing modes (NTMs) are observed together with fully developed m/n=1/1 sawtooth collapses in HL-2A plasmas. A model of sawtooth driven NTMs is proposed to calculate the island growth. In the model, the 2/1 component of the sawtooth due to the toroidal effect is applied as the boundary condition on the 1/1 surface for the NTM. An island equation for the neoclassical tearing mode growth can be then derived. The theoretical result fits well with HL-2A experiment data.

Xiaogang Wang
Peking University