

Abstract Submitted  
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**Peeling-off modes at tokamak plasma edge**<sup>1</sup> LINJIN ZHENG, Institute for Fusion Studies, University of Texas at Austin, TX 78712, M. FURUKAWA, Graduate School of Engineering, Tottori University, Tottori 680-8552, Japan — It is pointed out that there is a current jump between the edge plasma inside the last closed flux surface and the scrape-off layer and the current jump can lead the external kink modes to convert to the tearing modes, due to the current interchange effects. This mode conversion is proved by deriving the extended Rutherford equation. The magnetic reconnection in the presence of tearing modes subsequently causes the tokamak edge plasma to be peeled off to link to the diverters. In particular, the peeling or peeling-ballooning modes can become the “peeling-off” modes in this sense. This phenomenon indicates that the tokamak edge confinement can be worse than the expectation based on the conventional kink mode picture.

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