

Bifurcation of Perpendicular Rotation and Field Penetration at the Transition to RMP-induced ELM-crash Suppression

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The bifurcation of perpendicular rotation (v_{\perp}) at the transition of ELM-crash suppression has been measured using electron cyclotron emission imaging (ECEI) system on KSTAR. The ECEI revealed that the ELM crashes are suppressed along with a rapid reduction of v_{\perp} , which synchronizes with the transition into and out of the ELM-crash suppression. The v_{\perp} bifurcation is mainly attributed to the rapid change of $E \times B$ velocity and the v_{\perp} magnitude is maintained the smallest near the q_{95} rational flux surface during the ELM-crash suppression. The plasma response to the RMP, normalized by v_{\perp} changes, is strongest in the vicinity of q_{95} rational flux surface during the ELM-crash suppression.

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