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EX/P4-29: Perturbation Features of Intrinsic and Pellet Induced ELMs on HL-2A

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The H-mode discharge is generally accompanied by quasiperiodic edge localized mode (ELM) events. Many efforts have been spent worldwide on the understanding, mitigation and control of the ELMs, in order to eventually suppress the most destructive ELMs to meet the lifetime requirements on ITER target plates. The pellet pacing ELM mitigation concept is being tested in many tokamaks, but the mechanism of a pellet triggering an ELM is yet partly understood. In HL-2A tokamak, ELMy H-mode operation is routinely performed and small type-III ELMs with high repetition rate and some type-I (or possibly large type-III) ELM events are observed. Pellet injection experiments are performed in ELMy H-mode and ELM-free H-mode as well as L-mode plasmas to study the physics of pellet triggering ELM. The analysis and comparison of magnetic perturbation spectra and the toroidal mode number of pellet-triggered ELM events with those of spontaneous ELMs in H-mode plasmas, are presented in this article.

Country or International Organization of Primary Author

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Collaboration (if applicable, e.g., International Tokamak Physics Activities)

ITER Pedestal Physics

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