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PD/P8-09: Edge Magnetic Topology Change Induced by LHCD and its Profound Effects in EAST

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The challenge of fusion research and technology is to confine a burning plasma while having tolerable continuous and transient heat and particle fluxes on the plasma facing components. Experimental results demonstrate the edge magnetic topology plays a key role in the dependence of the plasma confinement, the edge MHD stability and the interaction between plasma and the first wall, particularly with the divertor. By applying Resonant Magnetic Perturbations (RMPs) induced by a set of in-vessel coils at the plasma edge, one can influence the edge pedestal transport, as well as the periodic transient power loads due to the Edge Localized Modes (ELMs). However, in future fusion reactors in-vessel perturbation coils may not be feasible.

Country or International Organization of Primary Author

Germany

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

EAST

Primary author: Mr LIANG, Yunfeng (Germany)

Presenter: Mr LIANG, Yunfeng (Germany)

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