

Interpretation of Core Localized Alfvén Eigenmodes in DIII-D and JET Reversed Magnetic Shear Plasmas

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[†] See Appendix of J. Pamela et al., Fusion Energy 2004 (Proc. 20th Int. Conf. Vilamoura, 2004) IAEA, Vienna (2004)

Abstract

Reversed shear Alfvén eigenmodes (RSAE) that were observed in the Joint European Torus (JET) [P.H. Rebut, and B.E. Keen, *Fusion Technol.* **11**, 13 (1987)] and DIII-D [J.L. Luxon, *Nucl. Fusion* **42**, 614 (2002)] and studied with the ideal magnetohydrodynamic (MHD) code NOVA-K [C.Z. Cheng, *Phys. Rep.* **211**, 1 (1992)]. It was found that the frequency behavior of the RSAEs can be described accurately by the NOVA-K code when sound wave coupling and toroidal plasma rotation are taken into account. For the mode activity on JET, the calculated drive exceeds the mode damping rate, consistent with experimental observations while on DIII-D the growth rate from neutral beam ions for modes with high toroidal mode numbers is insufficient to account for the excitation of the modes.

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