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Measurements of Alfven Eigenmode stability in JET D and T plasmas

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We present recent measurements and analyses of Alfven Eigenmode (AE) stability in JET D and T plasmas. Stable AEs are resonantly excited by an array of eight in-vessel, toroidally-spaced antennas with independent power and phasing. Databases of stable AE frequencies, net damping rates $\gamma < 0$, and toroidal mode numbers have been assembled for various isotope mixes, and trends are explored. In addition, we highlight two distinct cases when radiative and collisional damping dominate the experimentally measured damping rates, confirmed by MHD modeling. Unstable AEs –including low frequency BAEs to high frequency EAEs –from approximately 2000 plasmas have been compiled into a database; trends in the saturation amplitudes, growth rates $\gamma > 0$, and poloidal/toroidal mode numbers are investigated. Finally, we hope to show preliminary results from JET's DT campaign, from which the contribution of alpha drive to AE stability could be assessed.

Speaker's Affiliation

MIT PSFC, Cambridge

Member State or IGO

United States of America

Primary author: Dr TINGUELY, Roy (MIT PSFC)

Co-authors: PORKOLAB, Miklos (MIT); Dr PUGLIA, Paulo (EPFL); Dr FIL, Nicolas (UKAEA); Mr DOWSON, Stuart (UKAEA); COELHO, Rui (Instituto de Plasma e Fusão Nuclear / Instituto Superior Técnico); DUMONT, Remi (CEA, IRFM); FASOLI, Ambrogio (CRPP-EPFL); Dr FITZGERALD, Michael (UKAEA); Mr GUILLEMOT, Victor (ESPCI); Dr KEELING, David (UKAEA); Mr KUMAR, Iyngkarran (Durham University); PODESTA, Mario (Princeton Plasma Physics Laboratory); SHARAPOV, Sergei (CCFE); Dr TEPLUKHINA, Anna (Princeton Plasma Physics Laboratory); JET CONTRIBUTORS

Presenter: Dr TINGUELY, Roy (MIT PSFC)

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