Abstract Submitted
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Giant sawtooth stability and core-localized fluctuations in JET plasmas[1] G.J. KRAMER, PPPL,USA, M.F.F. NAVE, CFN/IST Lisbon, PT, R. NAZIKIAN, D.S. DARROW, K. HILL, E. MAZZUCATO, PPPL, M.R. DE BAAR, FOM Rijnhuizen, NL, V. KIPTILY, S.D. PINCHES, S.E. SHARAPOV, UKAEA, UK, E. RACHLEW, VR KTH Stockholm, SE, M. REICH, IPP Garching, DE, S. HACQUIN, F. NABAIS, CFN/IST Lisbon, PT, F.E. CECIL, Col. School of Mines, USA, JET-EFDA COLLABORATION — In ICRF heated plasmas giant sawteeth (ST) can develop with periods larger than one second. At low ICRH power (<3 MW) a well defined ST period that increases with power is observed. At higher powers a large variation in ST periods is observed with a long ST-free period followed by a phase of shorter ST periods. At higher ICRH powers Alfven eigenmodes (AEs) are also observed. ST are stabilized by the fast-ion pressure inside the q=1 surface but the pressure gradients drive AEs which can lead to fast ion losses and triggering of ST. Other ST trigger candidates are low-frequency MHD activity and broadband turbulence induced transport. Due to the improvement of core diagnostics, especially the X-mode reflectometer, details of the AE activity and of the turbulent fluctuations can be studied in great detail inside the q=1 surface. Experimental results will be shown and compared with modelling results. Evidence will be presented for possible causes of giant ST crashes.

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