

Abstract Submitted
for the DPP14 Meeting of
The American Physical Society

Observed linkage between ELM occurrence times and the phase of full flux loop signals in JET plasmas¹ R.O. DENDY, CCFE Culham, S.C. CHAPMAN, CFSA Warwick U., T.N. TODD, CCFE Culham, N.W. WATKINS, MPI-PKS Dresden, A.J. WEBSTER, CCFE Culham, F. CALDERON, CFSA Warwick U., J. MORRIS, CCFE Culham, JET EFDA CONTRIBUTORS TEAM — We have identified (S Chapman, R Dendy et al, POP **21** 062302 (2014)) a phase relation between the occurrence times of edge localized modes (ELMs) in H-mode plasmas in the Joint European Torus (JET), and the voltage in full flux toroidal loops in the divertor region. The ELMs are observed in Be II emission at the divertor, and arise from intrinsic ELMing, with no external control applied. We relate ELM occurrence times from the Be II signal to the time-evolving phase of full flux loop signals, which provide global measurements proportional to the voltage induced by changes in poloidal magnetic flux. Each ELM produces a rapid initial pulse in the full flux loop signals. The arrival time of the next ELM, relative to this pulse, is in two categories: (a) prompt ELMs, directly paced by the initial response in the flux loop signals; and (b) all other ELMs, which occur after the decay of the initial response of the full flux loop signals. The times at which ELMs in category (b) occur, relative to the first ELM of the pair, cluster at times when the instantaneous phase of the full flux loop signal is close to its value at the time of the first ELM. This may contribute to the distribution of inter-ELM time intervals reported by A Webster, R Dendy et al, PPCF **56** 075017 (2014).

¹Funded by EU Horizon 2020 programme grant 633053 and RCUK Energy Programme grant EP/I501045

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Date submitted: 11 Jul 2014

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