

Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

Isotopic mass and fast ion effects in JET alpha heating plasmas¹

ROBERT BUDNY, Princeton Univ, JET COLLABORATORS^A TEAM — Experiments to detect alpha heating were performed in TFTR (1994) [1] and in JET (DTE1 1997) [2]. Observations of alpha heating were reported. Hydrogenic isotopic mass effects were seen in TFTR, but were assumed to be negligible in JET although unexpectedly high T_i was seen in the DT plasmas. A reanalysis [3] showed strong correlation of core T_e and T_i with isotopic mass A , and with the time delays of significant sawteeth. Here effects of fast ions are studied. Beam ion pressure is also correlated with suppression of significant sawteeth, but is not correlated as strongly with the core T_e and T_i . Beam and alpha ion effects on confinement and heating are reported. ^aSee the Appendix of F. Romanelli et al., Proceedings of the 25th IAEA Fusion Energy Conference 2014, Saint Petersburg, Russia. [1] G.Taylor, *et al.*, Phys. Review Lett. **76** 2722 (1996). [2] Thomas, *et al.*, Phys. Review Lett. **80** 5548 (1998). [3] R.V.Budny, Nucl. Fusion **56** 036013 (2016).

¹Supported in part by EUROfusion No 633053

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Date submitted: 15 Jul 2016

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