Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Inter-ELM power decay length for ASDEX Upgrade, JET and ITER THOMAS EICH, BERNHARD SIEGLIN, ANDREA SCARABOSIO, Max-Planck-Institut fur Plasmaphysik, EURATOM Association, Boltzmannstr 2., D-85748 Garching, Germany, WOJTEK FUNDAMENSKI, EURATOM/CCFE Association, Culham Science Centre, Abingdon, Oxon, OX14 3DB, UK, ROBERT GOLDSTON, Princeton Plasma Physics Labarotory, Princeton NJ 08543, USA, ALBRECHT HERRMANN, Max-Planck-Institut fur Plasmaphysik, EURATOM Association, Boltzmannstr 2., D-85748 Garching, Germany, JET/EFDA COLLABORATION, ASDEX UPGRADE TEAM — Experimental measurements of the SOL power decay length (λ_q) estimated from analysis of fully attached divertor heat load profiles from two tokamaks, JET and ASDEX Upgrade, are presented. Data was measured by means of infrared thermography. An empirical scaling reveals parametric dependency $\lambda_q/\mathrm{mm} = 0.73 \cdot B_T^{-0.78} q_{cyl}^{1.2} P_{SOL}^{0.1} R_{geo}^{0}$. A comparison of these measurements to a heuristic particle drift-based model(R.J.GOLDSTON, www.pppl.gov/pub_report//2011/PPPL-4604.pdf) shows satisfactory agreement in both absolute magnitude and scaling. Extrapolation to ITER gives $\lambda_q \simeq$1 mm decay length and $\lambda_{int} \simeq$2.4 mm integral width.

Bruce Scott
Max-Planck-Institut fur Plasmaphysik, EURATOM Association,
Boltzmannstr 2., D-85748 Garching, Germany

Date submitted: 13 Jul 2011 Electronic form version 1.4