

Abstract Submitted  
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**A theoretical understanding of the scrape-off layer main heat-flux widths multi-tokamak database for limited plasmas**<sup>1</sup> FEDERICO HALPERN, Ecole Polytechnique Federale de Lausanne (EPFL), Centre de Recherches en Physique des Plasmas (CRPP), CH-1015 Lausanne, Switzerland, JAN HORACEK, Institute of Plasma Physics ASCR, Prague, Czech Republic, RICHARD PITTS, ITER Organization, Route de Vinon-sur-Verdon CS 90 046, F-13067 St Paul lez Durance Cedex, France, PAOLO RICCI, Ecole Polytechnique Federale de Lausanne (EPFL), Centre de Recherches en Physique des Plasmas (CRPP), CH-1015 Lausanne, Switzerland — The Scrape-off Layer and Divertor topical group of the International Tokamak Physics Activity (ITPA) has amassed a database comprising hundreds of measurements of the main scrape-off layer (SOL) heat-flux widths in inner-wall limited discharges [1]. We have carried out an analysis of the dependence of the heat-flux widths with respect to the plasma dimensionless parameters, derived from turbulent transport theory. Restricting our analysis to circular plasmas, we find that a model based on non-linearly saturated turbulence can reproduce the heat-flux width values found in the database with very good agreement.

[1] J. Horacek et al., in 42<sup>nd</sup> EPS Conference on Plasma Physics, (Lisbon, Portugal, 2015), O2.115.

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