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Scaling of L-mode heat flux for ITER and COMPASS-U divertors, based on five tokamaks J HORACEK, J SEIDL, P VONDRACEK, M KOMM, K JIRAKOVA, M HRON, F JAULMES, J ADAMEK, Institute of Plasma Physics of Czech Academy of Sciences, Czech Republic, G.F. MATTHEWS, S ELMORE, A THORNTON, UKAEA, Culham Science Centre, Abingdon, Oxon, OX14 3DB, UK, G DENG, X GAO, L WANG, R DING, Institute of Plasma Physics, Chinese Academy of Sciences, Hefei 230031, China, J OLSEN, J.J. RASMUSSEN, A.H. NIELSEN, V NAULIN, PPFE, Department of Physics, Technical University of Denmark, Building 309, DK-2800 Kgs. Lyngby, Denmark, D BRUNNER, B LABOMBARD, Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA, USA, A JARDIN, CEA, IRFM, F-13108 Saint-Paul-lez-Durance, France, M EZZAT, Universidad Carlos III de Madrid, Av. de la Universidad 30, 28911-Madrid, Spain, K CAMACHO, Universite de Lorraine, Nancy, France, CH GUILLEMAUT, Instituto de Plasmas e Fusao Nuclear, IST, Universidade Lisboa, Portugal — Based on *Nuclear Fusion* paper, we improve scalings of divertor L-mode power decay length. We employ data from tokamaks JET, EAST, MAST, Alcator C-mod and COMPASS and validate it against 2D turbulence simulation HESEL. The analysis covers 500 divertor heat flux profiles with 11 varying global plasma parameters. We see that two previously published scalings describe well only part of the database. We therefore derive 20 new scalings describing 86-93 % of the measured decay length variability. We so-predict for attached highest current L-mode in ITER: 10-20 MW/m^2 surface perpendicular heat flux and twice that for COMPASS-Upgrade.

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