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Comparison of ELM models with fast diagnostics in DIII- $D^1$ JOHN HOGAN, L. OWEN, Fusion Energy Division. ORNL, M. WADE, General Atomics, D. COSTER, IPP-Garching, M. GROTH, W. MEYER, M. FEN-STERMACHER, C. LASNIER, LLNL, DIII-D NATIONAL SCIENCE PROGRAM COLLABORATION — To pursue development of an extrapolable model for the ELM/wall interaction, we compare the 2-D, time-dependent evolution of predicted  $D_{\alpha}$  and CIII divertor region emission calculated by solps (b2-Eirene) simulations, directly with fast time-scale spectroscopic measurements [1]. As a complementary step, we compare the calculated edge/pedestal carbon ion  $(C^{6+})$  evolution with fast edge CER measurements of these profiles [2], using an ELM model based on characteristics of MHD peeling-ballooning modes. An empirical radial transport model positing the strong reduction of the radial electric field at the ELM event, with accompanying enhanced radial transport, and then a slow restoration during the intra-ELM period, is found to give a reasonable qualitative description for this phase. Results will be presented for further tests of the model for a series of ELMy H-mode discharges at higher and lower density, and with forward and reverse  $B_T$ . in which the recovery phase appears to be faster with reversed  $B_T$ . [1] M Groth, M Fenstermacher et al J Nucl Mater 2003, [2] M Wade, K Burrell et al J Nucl Mater, 2005

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