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Evolution of the 2D Spatial Profile of Visible Emission During an ELM in the DIII-D Divertor[1] M.E. FENSTERMACHER, M. GROTH, C.J. LASNIER, Lawrence Livermore National Laboratory, J.C. BOEDO, UCSD, A.W. LEONARD, General Atomics — The transient particle and energy loads due to Edge Localized Modes (ELMs) are a significant problem for the design of divertors in future tokamak reactors. Detailed understanding of the effect of the ELM perturbation on the 2D distribution of radiation in the divertor is needed to validate computer simulations and investigate mitigation schemes. Gated, intensified, tangentially viewing cameras with wavelength filters were used in combination with tomographic reconstruction techniques to provide 2D profiles of carbon and deuterium emission during ELM evolution in the DIII-D divertor. Preliminary 2D reconstructions of D_α and CIII visible emission during large Type-I ELMs will be shown. The dramatic broadening of the D_α emission profile near the target will be compared with the broadening of the heat flux profiles during ELMs from IRTV. Plans for obtaining the detailed temporal evolution of the 2D spatial profile of the divertor emission throughout an ELM will be described.

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