

Abstract Submitted
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ELM resolved measurement of fuel recycling on divertor targets in DIII-D¹ I. BYKOV, E.M. HOLLMANN, R.A. MOYER, UCSD, J.G. WATKINS, SNL, M. MAKOWSKI, C.S. LASNIER, A. MCLEAN, LLNL, H. WANG, ORAU — Simultaneous measurements of different atomic and molecular contributions are important for determining D recycling from plasma-facing components (PFCs). A splitted filtered imaging of visible-range molecular and atomic emission was applied for the first time for synchronous measurements of D_α (656 nm), D2 Fulcher- α band (600 nm), and CD (430 nm) emissions in the strike point region of the lower divertor in DIII-D. Framing rate up to 1 kHz was sufficient to resolve intra- and inter-ELM phases of H-mode discharges. Radial profiles of atomic (molecular) fluxes of recycled D were deduced using respective $S(D)/XB$ rate coefficients. We present the results of particle flux measurements for a series of shots with varying densities ($n/n_{GW} = 0.5-0.8$), which affected the degree of the divertor detachment and the balance between individual channels of D recycling from PFCs.

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I. Bykov
UCSD

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