

Abstract Submitted
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Measurement of Type-I ELM Pulse Propagation in Scrape-Off Layer Using Optical System of Motional Stark Effect Diagnostics in JT-60U

TAKAHIRO SUZUKI, NAOYUKI OYAMA, NOBUYUKI ASAKURA, Japan Atomic Energy Agency — Propagation of plasma ejected by type-I ELM has been measured in scrape-off layer (SOL), using optical system of motional Stark effect (MSE) diagnostics in JT-60U as beam emission spectroscopy (BES) diagnostics. This MSE/BES system measures D α emission from heating neutral beam excited by collisions with the ejected plasma, as well as background light (e.g. bremsstrahlung). In order to separate the beam emission and the background light, a two-wavelength detector is introduced into the MSE/BES system. The detector observes simultaneously at the same spatial point in two distinct wavelengths using two photomultiplier tubes through two interference filters. One of the filters is adjusted to the central wavelength of the beam emission and the other is outside the beam emission spectrum. Subtracting the background light, temporal change in the net beam emission in SOL has been evaluated. Comparing conditionally-averaged beam emission with respect to 594 ELMs at 5 spatial channels (0.02-0.3 m outside the main plasma near equatorial plane), radial velocity of the ELM pulse propagation in SOL is about 0.8-1.8 km/s. Work supported by Grand-in-Aid for Young Scientists (B) No. 20760586

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