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Analysis of the interaction of deuterium plasmas with tungsten in the Fuego-Nuevo II device GONZALO RAMOS, Centro de Investigación en Ciencia Aplicada y Tecnología Avanzada, Instituto Politécnico Nacional, FERMÍN CASTILLO, Instituto de Ciencias Nucleares, Universidad Nacional Autónoma de México, MARTÍN NIETO, Centro de Investigación en Ciencia Aplicada y Tecnología Avanzada, Instituto Politécnico Nacional, MARCO MARTÍNEZ, JOSÉ RANGEL, JULIO HERRERA-VELÁZQUEZ, Instituto de Ciencias Nucleares, Universidad Nacional Autónoma de México — Tungsten is one of the main candidate materials for plasma-facing components in future fusion power plants. The Fuego-Nuevo II, a plasma focus device, which can produce dense magnetized helium and deuterium plasmas, has been adapted to address plasma-facing materials questions. In this paper we present results of tungsten targets exposed to deuterium plasmas in the Fuego Nuevo II device, using different experimental conditions. The plasma generated and accelerated in the coaxial gun is expected to have, before the pinch, energies of the order of hundreds eV and velocities of the order of $40,000 \text{ m s}^{-1}$. At the pinch, the ions are reported to have energies of the order of 1.5 keV at most. The samples, analysed with a scanning electron microscope (SEM) in cross section show a damage profile to depths of the order of 580 nm, which are larger than those expected for ions with 1.5 keV, and may be evidence of ion acceleration. An analysis with the SRIM (Stopping Range of Ions in Matter) package calculations is shown.

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