

Abstract Submitted  
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**Design Issues for an Intense Neutron Calibration Source for ITER** G.A. WURDEN, JAEYOUNG PARK, Los Alamos National Laboratory, Y.S. HWANG, Seoul National University — ITER needs to be able to calibrate its neutron diagnostics, in-situ. We are developing a design for a compact  $10^{11}$  n/sec DD neutron source using multiple deuterium ion beams impacting on a thin-film deuterated liquid propane jet target. This will be substantially higher flux than any commercial non-radioisotope neutron source. The system will be cooled by liquid nitrogen, and the beam source is differentially pumped from the target region, with no intervening windows. It must operate for weeks at a time, without maintenance, inside of ITER, with a minimum of interfering structures. We envision the substantial power ( $< 100$  kW), cooling, and gas feed will enter the ITER vessel from the outside, via umbilical lines. The system should be movable, ideally fitting on the end of an ITER manipulator arm. Possible solutions to the overall design issues will be discussed. This work is supported by the Office of Fusion Energy Sciences, and DOE/LANL contract DE-AC52-06NA25396 and LANL-ITER contract FIA-09-035.

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