Abstract Submitted
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Influence of DIII-D Experiments on the Design of the ITER Shattered Pellet Injection System[1] N. COMMAUX, D. SHIRAKI, L.R. BAYLOR, S.J. MEITNER, S.K. COMBS, Oak Ridge National Laboratory, N.W. EIDIETIS, General Atomics, E.M. HOLLMANN, V.A. IZZO, R.A. MOYER, U. California San Diego — Shattered pellet injection (SPI) is a prime candidate for ITER disruption mitigation because of its deeper penetration and larger particle flux compared to massive gas injection (MGI). The ITER disruption mitigation system will likely use high Z impurities such as neon. An upgrade of the SPI on DIII-D (the only operating SPI in the world) enables for the first time ITER relevant injection characteristics: 400 torr.L neon pellets. The design of the SPI system is described as well as its evolution due to the results from DIII-D experiments and ITER design requirements. Recent experiments focused on differences in particle assimilation, thermal and current quench characteristics compared to MGI. Radiation asymmetries are regarded as a potential issue on ITER. Studies using MGI have showed that these effects can be significant on present devices. They are compared to new SPI results since they could influence the implementation of the SPI on ITER.

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