Abstract Submitted
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Shattered Pellet Injection System applied to thermal quench and runaway mitigation[1] NICOLAS COMMAUX, D. SHIRAKI, L.R. BAYLOR, ORNL, N.W. EIDIETIS, GA, E.M. HOLLMANN, V.A. IZZO, R.A. MOYER, UCSD — Shattered pellet injection (SPI) has demonstrated excellent performance in terms of response time and global plasma thermal energy dissipation. The ITER SPI system has to achieve heat dissipation while keeping radiation asymmetries at an acceptable level, and efficient mitigation of runaway electrons. These capabilities have been studied for the first time on DIII-D. Experiments focused on the characterization of the radiation asymmetries during an SPI shutdown and its relation to the large MHD activity observed during massive gas injection (MGI) cases to be a dominant effect in radiation asymmetries. The observed higher core radiation during for SPI could indicate differences in the energy dissipation: MHD may have a smaller effect since the particles deposition is deeper than for MGI. SPI was also applied to a developed runaway beam. The consequences on the runaway losses and current decay have been studied to determine its potential as a runaway suppression tool.

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Punit Gohil
GA

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