

Abstract Submitted  
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**Progress of Disruption mitigation with SPI\* and integration of real-time diagnostics for DECAF\*\* in KSTAR.**<sup>1</sup> WOONG CHAE KIM, JAYHYUN KIM, Natl Fusion Res Inst, STEVEN SABBAGH, Columbia University, THE KSTAR TEAM, ITER DISRUPTION TASK FORCE TEAM, THE COLUMBIA UNIVERSITY TOKAMAK PLASMA DISRUPTION PREDICTION AND AVOIDANCE RESEARCH TEAM — To validate the disruption mitigation strategy of ITER discharge with multiple injections of the Shattered Pellet Injection (SPI) system, two identical SPI systems were installed symmetrically at the opposite position on the toroidal plane and they have been tested on KSTAR discharges. Preliminary test results indicated that synchronicity in the arrival time of the two pellets is critical among other factors in increasing the success rate of the current quench thus increasing radiation dissipation\*. Many diagnostic systems such as MHD spectroscopy, CES, and ECE are employed to support the DECAF analysis. The real-time data from these diagnostics and the state-of-the-art ECEi system (i.e., 2-D electron temperature) as well as MSE will be utilized for real-time DECAF analysis for the first time. Then the RT DECAF analysis will be integrated into the overall KSTAR control system so that the disruption avoidance system can be fully tested.\*\* In this paper, the latest status of the SPI experiment and the integration of the advanced diagnostics for RT DECAF capability will be reported.

<sup>1</sup>\* Work supported by ITER organization with the SPI provided by ORNL via ITER collaboration. \*\* Real-time DECAF is under development by Columbia University. KSTAR is providing diagnostics interfaces.

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