

Abstract Submitted
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Real-time plasma event monitoring on TCV¹ THOMAS CORNELIS BLANKEN, FEDERICO FELICI, Eindhoven University of Technology, Eindhoven, the Netherlands, CRISTIAN GALPERTI, Ecole Polytechnique Federale de Lausanne, SPC-EPFL, Lausanne, Switzerland, THE TCV TEAM, THE EUROFUSION MST1 TEAM — A tokamak reactor plasma control system (PCS) supervisor must take decisions about discharge segment scheduling, exception handling (e.g. emergency shutdown), and prioritized control tasks [D. Humphreys et al, 2015 Physics of Plasmas 22 021806], based on chains of plasma events, such as stability limit violations, deviations from targets and expected/predicted behavior, and actuator failure [P.C. de Vries et al, 2011 Nuclear Fusion 51 053018]. We present first results of a real-time plasma event monitor for NTMs and locked modes on the TCV tokamak. The event monitor contains finite-state automata, with events based on user-defined thresholds on MHD amplitude signals [C. Galperti et al, 2017 IEEE Transactions on Nuclear Science 64]. This work supports the integration of high-level plasma supervision, control and actuator management for disruption avoidance experiments.

¹See author list of S. Coda et al, 2017 Nuclear Fusion 57 102011 and author list of H. Meyer et al, 2017 Nuclear Fusion 57 102014.

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