



EX/P1-25, KONG et al.

Highlights:

- New generic PCS architecture for **actuator management, plasma monitoring and integrated control** has been implemented and tested on TCV for the first time
- Simulations **starting from no island ($w=0$)** achieved for the first time with the Modified Rutherford Equation (MRE), reproducing well the width evolution of “seedless” 2/1 NTMs that are typically triggered by central co-ECCD on TCV

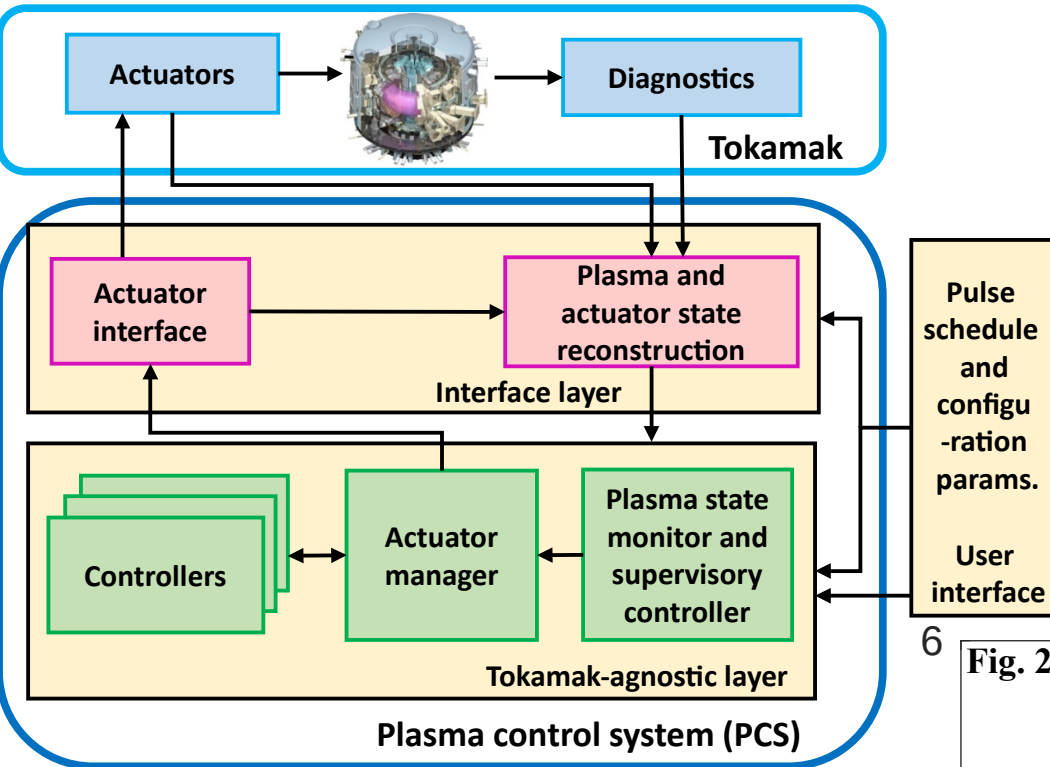


Fig. 1 Task-based generic PCS architecture:

- Separate interface and *tokamak-agnostic* layer
- *Task-based* approach in the *tokamak-agnostic* layer: a layer of abstraction for operators
- RT control of NTMs and beta with automated actuator sharing demonstrated on TCV

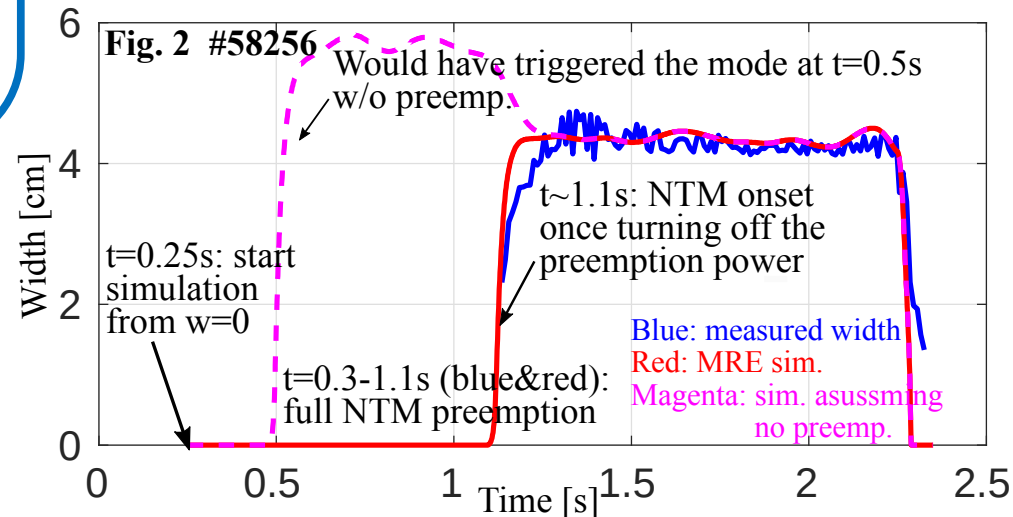


Fig. 2 NTM preemption with off-axis co-ECCD (0.3-1.1s: NTM preemption; 0.4-2.25s: central co-ECCD)