

Summary of completed work

- ❑ Self-consistent kinetic modeling of primary runaway formation during thermal quench (prompt conversion of the plasma current into runaway current is advantageous for plasma position control).
- ❑ Kinetic near-threshold theory for runaway sustainment and runaway avalanche in presence of synchrotron losses (enhanced critical electric field found for avalanche onset).
- ❑ Marginal stability scenario for runaway-dominated current quench (runaway avalanche threshold determines the current decay time-scale).
- ❑ Revised thresholds of runaway-driven micro-instabilities (instability window quantified for ITER-relevant parameters).