



Contribution ID: 1081

Type: not specified

## P3.034 Disruption simulation for design of JT-60SA components.

*Wednesday, 19 September 2018 11:00 (2 hours)*

Disruption simulations with DINA code are performed for JT-60SA design. The simulation results have been applied to design of many components, not only for the vacuum vessel and in-vessel components, but also for peripheral components. For instance, for design of in-vessel coils, the stabilizing plate and magnetic sensors, EM force induced by halo current and eddy current at disruption were calculated. For design of poloidal field (PF) coils, the power supply of PF coils and refrigerator system for superconducting coils, eddy current of PF coils and AC loss of superconducting coils were evaluated. DINA code calculates free boundary plasma equilibria, taking into account eddy currents in the vacuum vessel and a model of the power supplies. We performed three type of disruption simulation, up and downward VDE disruption and major disruption (MD). VDE is caused by vertical instability due to loss of control. As for MD, Plasma stays at center when disruption starts. Poloidal halo current is larger with longer current quench time and this result is same as that done for ITER. We will present details of JT-60SA DINA simulation and application of them to JT-60SA design.

**Presenter:** TAKECHI, Manabu (Naka Fusion Institute Fusion Energy Research and Development Directorate National Institutes for Quantum and Radiological Science and Technology (QST))

**Session Classification:** P3