



Contribution ID: 650

Type: **not specified**

## **P2.078 AC loss assessment for fusion conductors**

*Tuesday, 18 September 2018 11:00 (2 hours)*

The coupling currents loss for fusion conductors is frequently assessed applying a sinusoidal field sweep of fixed, small amplitude and variable frequency. From the initial slope of the loss curve, the coupling loss time constant is derived and applied in the loss calculation over the whole range of field transient. In this work, the traditional AC loss assessment is compared to an alternative experimental assessment made on trapezoidal field change, which mimics the actual field change rate in the central solenoid of tokamaks during the plasma start-up. Dedicated test campaigns in SULTAN provide the data for the assessment. The impact of the new AC loss assessment allows a more realistic prediction of the thermal-hydraulic behavior of the Central Solenoid in operation. The details of the assessment procedure are discussed and a new standard AC loss test procedure is proposed.

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**Session Classification:** P2