

ICRH ITER-Like Antenna electrical performance

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The future integration on Tore Supra (TS) of the new Ion Cyclotron Heating (ICH) ITER-like prototype antenna will be performed in March to achieve the final validation within plasma conditions. However, after few years of developments and electrical optimizations, this antenna has passed several thermo/mechanical and electrical tests. This paper presents the latest electrical results of the ITER Like antenna under vacuum condition and inside TS with different plasma configuration. The load resilient capability is therefore mainly investigated according to the antenna matching efficiency facing large plasma load variation. Preliminary high RF power (40kV, 1400 A) for long pulse duration of 5 seconds is defined as antenna test configuration. The first electrical performance results are presented with experimental measurements coming from the latest implemented diagnostics such as the new radiated strap current monitoring. Moreover, the ITER-Like antenna behavior is described and compared with theoretical calculations and expected electrical/electromagnetic results.