

## **Recent developments in the external conjugate-T matching project at JET**

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*\*See the Appendix of M.L. Watkins et al., Fusion Energy 2006 (Proc. 21st Int. Conf. Chengdu, 2006) IAEA, (2006)*

Following a successful proof-of-principle test [1] the External Conjugate-T (ECT) matching system is being installed on two ICRH antenna arrays at JET. Together with the 3dB splitter system already installed on another pair of antennas the ECT will ensure continuous injection of RF power into ELMy plasmas. Direct comparison of the two systems will also allow to assess the implications of RF power injection into ELMs which remain an important issue for ITER. The project development revealed several new challenging problems specific to the ECT scheme including the limited stability of an automatic matching algorithm in optimized ELM-tolerant configurations and inadequate efficiency of the existing VSWR monitoring system for detection of arcs in the conjugated lines. An overview of the ECT status will be presented focusing on the solutions to the problems which have been identified. These are: a co/counter-clockwise tracking option for the ECT matching algorithm and an Advanced Wave Amplitude Comparison System (AWACS) for improved arc detection.

[1] I. Monakhov et al., Fusion Eng. and Design, **74**, (2005) 467.

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