

Abstract Submitted  
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**Transmitter Upgrade for JET Alfvén Eigenmode Fast Particle Interaction Studies**<sup>1</sup> P. WOSKOV, M. PORKOLAB, MIT PSFC, A. FASOLI, P. BLANCHARD, CRPP-EPFL — One of the main missions of the worldwide fusion R&D effort is to develop predictive and control capability of burning plasmas in support of ITER. A unique 8-coil antenna system has been implemented on JET to study fast-ion interactions with Alfvén eigenmodes in the 50 – 500 kHz range that could potentially increase losses of  $\alpha$  particles and reduce fusion gain. The single 4 kW transmitter will be replaced with eight 1 kW transmitters that will independently power each antenna to more uniformly distribute the power among the antennas. This will improve the coupling to higher order modes ( $n = 5 - 30$ ) for damping studies. Independent drivers will also be used to make possible multi frequency and arbitrary phase studies of multiple modes and traveling modes. Various analog and digital driver approaches are being considered to provide the needed flexibility. A systems design will be presented.

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