

**FABRICATION AND DESIGN OF A HIGH POWER MICROWAVE  
LAUNCHER FOR KSTAR\***

R. Ellis, J. Hosea, and H. Park  
Princeton Plasma Physics Laboratory, PO Box 451, Princeton, NJ 08543  
rellis@pppl.gov

The Korea Superconducting Tokamak Advanced Research (KSTAR) microwave launcher will be used to assist plasma start-up, and for heating and current drive experiments. A single 1 MW beam is to be launched from a horizontal port that is shared with two Thomson scattering systems. Scanning about two axes is provided.

A fixed, focusing mirror and a 2-axis steerable mirror are used to launch the beam. The mirrors and steering mechanism of the P200x launchers built for DIII-D have been adapted for use in KSTAR. Mirror locations and steering geometry assure that the necessary scanning range is achieved. The launcher must withstand thermal loads and electromagnetic forces, and be compatible with the KSTAR operating environment.

In this talk, the design and present status of the KSTAR microwave launcher is presented. Operational experience with the DIII-D launchers, and its influence on the KSTAR design, is discussed. A proposed steady state upgrade, involving active cooling of the mirrors and a reduced steering range, is proposed. This upgrade would be relevant to ITER ECH launcher designs, and might provide an opportunity for collaboration between the U.S., Korea and others.

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