

## **EBW coupling using a twin waveguide launcher on the MST reversed field pinch**

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Electron Bernstein wave (EBW) injection is considered a promising method for localized heating and current drive overdense plasmas such as Reversed Field Pinches (RFPs). Theoretical work indicates that a finite perpendicular launch angle can improve coupling of externally launched electromagnetic waves, and that the coupling is predicted to be non-symmetric with respect to the launch angle. Experiments are reported here in which EBWs were launched by a twin waveguide antenna on MST. The reflection coefficients and phase shifts have been measured for each arm as the phase between waveguides is varied: for appropriate phasings, over 80% of the power can be coupled. In addition, density profiles at the edge are measured using an array of Langmuir probes, and this data is used to compute the reflection coefficients predicted by theory. Coupling measurements are consistent with theoretical models. Results are presented for a scan of the polarization (O and X modes) facilitated by a rotating antenna support.