Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Contained Alfven eigenmodes in mirrors with sheared rotation[1]
ABRAHAM FETTERMAN, NATHANIEL FISCH, Princeton University — In rotating mirrors, a fixed azimuthal perturbation in the lab frame appears as a wave in the rotating frame. If there is sheared rotation, the plasma-frame frequency will also vary radially due to the Doppler shift. This can lead to radially localized Alfven eigenmodes with high azimuthal mode numbers. Such contained Alfven modes are found both for peaked and non-peaked rotation profiles. These modes might be useful for alpha channeling or ion heating, as the high azimuthal wave number allows waves with zero frequency in the lab frame to exceed the ion cyclotron frequency in the rotating frame for reasonable values of the rotation frequency.

[1]This work was supported by the DOE under Contract Nos. DE-FG02-06ER54851 and DE-AC0276-CH03073.

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Date submitted: 14 Jul 2010 Electronic form version 1.4