

Plasma gun array

A rotating conducting wall, according to theory, should stabilize a linear plasma column against certain magnetohydrodynamic instabilities. Shown here is a view down the inside of such a wall, in the rotating wall machine at the University of Wisconsin–Madison. Along its 1-meter length, the 16-cm-diameter, glass- and copper-lined stainless-steel tube reflects the sixfold symmetry of the triangular array of seven plasma “guns” centered at the far end. To study the wall’s stabilizing effect, the Wisconsin researchers, led by Cary Forest, ignite an arc plasma in each gun and then propel the plasmas into the tube while it rotates at speeds approaching 7000 rpm. As predicted, the rotation did indeed increase the stable range of the plasma current, though some discrepancies remain to be explored. (C. Paz-Soldan et al., *Phys. Rev. Lett.*, in press; image submitted by Carlos Paz-Soldan.)

To submit candidate images for Back Scatter, visit <http://www.physicstoday.org/backscatter.html>.

