ABSTRACT

A stabilized pinch configuration is described, consisting of a D-shaped plasma cross section wrapped tightly around a guiding axis. This "helical–D" geometry produces a several-fold larger transform of magnetic line direction than do conventional external helical windings, as in classical stellarators. It is proposed that the helical–D transform be used to reverse the pitch of the magnetic lines in a pinch, in order to attain the high magnetic shear and pitch reversal of the reversed field pinch (RFP), but without the "dynamo" fluctuation processes normally needed to sustain the reversal in axisymmetric RFPs. A helical–D pinch experiment might demonstrate good confinement at low-q.

Key Words: *pinch, reversed field pinch, RFP, helical, transform*