

Abstract Submitted
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Axisymmetric Magnetic Mirrors¹ THOMAS SIMONEN, simon42@yahoo.com, MAGNETIC MIRROR STUDY GROUP COLLABORATION — Linear magnetic mirror confinement systems offer key advantages in construction, operation and maintenance, as well as an absence of disruptions. While simple magnetic mirror systems are MHD unstable: minimum-B Ioffe coil systems are robustly stable and therefore have been the work horse of most past experiments. However Minimum-B coils tend to be larger and have weaker magnetic fields than simple circular coils. They also lead to resonant and neoclassical radial transport. Consequently the power balance of minimum-B systems is less favorable than can be achieved in axisymmetric mirrors. Over the past years several ways of providing MHD stability have been demonstrated in axisymmetric mirror experiments and other methods have been proposed. The emergence of these methods raises the interest in magnetic mirrors as a potential neutron source for material testing or as a fusion-fission hybrid. This paper describes ten methods that provide MHD stability to axisymmetric mirrors.

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