

P1.1063 Plasma confinement by moving multiple mirrors

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See the full abstract here:

<http://ocs.ciemat.es/EPS2019ABS/pdf/P1.1063.pdf>

The achievable gain in magnetic mirrors fusion machines is limited by particles and energy flux through the mirrors. The moving multiple mirrors (MMM) concept is based on many mirror coils at each end of the trap, synchronized in sequence to generate magnetic mirror that moves towards the centre of the trap. Particles escaping from the main cell are scattered out of the loss-cone in the MMM sections and propelled back inside by the magnetic wave. Analytical optimization of the MMM parameters for a conceptual fusion mirror machine, suggests that gain $\gg 1$ can be obtained with reasonable voltage, current and power dissipation in the MMM driving system. We present the design of an experimental system aiming to explore the MMM concept and demonstrate orders of magnitude reduction in axial plasma flux.

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