

Abstract Submitted
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A design of the MHD stable axisymmetric mirror ISAO KATANUMA, Univ of Tsukuba — The PRC (Plasma Research Center GAMMA10) group is planning the construction of next linear device to perform the divertor experiment by using its endloss flux since last year. One candidate device is considered to be a single axisymmetric mirror. The reasons are that the axisymmetric mirror has attractive features on a collaboration with the mirror community and a future mirror fusion device as well as the construction costs of pancake coils are lower than the base-ball coils. The axisymmetric mirror stabilizes the interchange modes with the help of large $E \times B$ azimuthal velocity shear flow surrounding the core plasma confining region. This flow shear is realized by making the radial electric field, which is similar to the vortex confinement of recent GDT[1]. Although this flow shear induces the Kelvin-Helmholtz instability, it is found to cause not so large radial transport when the magnitude of the flow shear is strong. The axisymmetric mirror also stabilizes the interchange modes with the help of large ion endloss flux just like gas dynamic trap (GDT). Here the large endloss flux is needed to perform the divertor experiment. [1] A.Beklemishev, et.al., Fusion Sci. Tech. 57, 351 (2010).

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