

Abstract Submitted  
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**Construction of an axisymmetric tandem mirror at USTC** XUAN SUN, Univ. of Science and Technology of China, DEPARTMENT OF MODERN PHYSICS, UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA TEAM — A mirror machine is being built at USTC to explore the basic physics of linear fusion plasmas. In the past, many mirror machines employ min-B configurations to change the field curvatures in attempt to suppress the MHD instability. Success of this approach, however, cannot offset the disadvantage it brings, e.g., the neo-classical transport and the low mirror ratio. New theory points out one can achieve MHD stable mirror plasma with pure axisymmetric magnetic field if the center plasma can be anchored by a MHD stable boundary plasma. Under this guidance, a mirror machine, KMAX, is being built to study the physics of axisymmetric tandem mirror with boundary stabilizers. Currently, KMAX only consists of central cell and two plug cells, with maximum field strength near 1T at mirror throat. The total length is 10 meters, and the diameter of central cell and mirror throat is 1.2 and 0.3 m, respectively. A 100k Watts with pulse length of 1 ms is being developed for the ICRH.

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