



## Overview of KMAX experiments

Xuan Sun, Ming Liu, Munan Lin, and Peiyun Shi

University of Science and Technology of China, Hefei, 230026, China

The newly built KMAX, Keda Mirror with AXisymmetricity, at USTC, is devoted to exploring alternative magnetic fusion concepts. It is an axisymmetric tandem mirror consisting of a central cell and two end cells with total axial length over 10 meters. The length of central cell is 5.2 m, and the inner diameters of the central chamber and the mirror throat are 1.2 and 0.3 m respectively, with the S.S. wall thickness of 10 mm. Three sets of turbo pump, one 1200 l/s in each end cell and one 2000 l/s in the central cell, are used to pump the background pressure to  $6 \times 10^{-7}$  Torr or lower. The maximum magnetic field at the mirror throat is 4 kGauss, and the mirror ratio is from 5 to 10 in current magnetic configuration. Three different approaches to the magnetic confined fusion are actively pursued on KMAX, namely, (a) Tandem mirror research. Different heating schemes and the preliminary results of KMAX will be discussed and presented. (b) Colliding and Merging of FRC (Field Reversed Configuration). FRC is dubbed as a dark horse by fusion researchers. We will present the latest data of translating speeds as well as other information key to understanding its dynamical process (c) Design of Rotating Magnetic Field (RMF) experiment. RMF can produce steady state FRC and possess the potential to become a reactor. In summary, we will show that how we take advantages of all the three approaches and make them a single KMAX program.