FRENA: An upcoming facility for experimental Nuclear Astrophysics

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Introduction

The proposed Facility will provide opportunities of research in the field of experimental Nuclear Astrophysics. Such opportunities do not exist in our country in spite of the fact that there exists enormous experience and expertise in the field of low energy Nuclear Physics. The Facility will centre around a 3 MV Tandetron (Tandem accelerator) with specific features like high beam currents, pulsed beams and extreme stability in terms of beam current and energy along with state-of-the-art detector systems. The Facility will address important queries related to different Astrophysical scenarios such as specific reactions in the H- and He-burning phases of stars, heavy-ion reactions involving ^{12}C, ^{16}O etc., study of p-process reactions and at a later stage, the neutron-induced reactions.

In the present talk the various features of the FRENA machine will be presented along with the proposed future development for the fruitful utilization of the machine will be discussed.