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## **Design of a 400kV High Intensity Accelerator Facility for Jinping Underground Laboratory for Nuclear Astrophysics**

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Jinping Underground laboratory for nuclear astrophysics (JUNA) will take advantage of the ultralow background of the deep underground, using a high intensity accelerator facility and highly sensitive detector to measure directly tiny reaction rates which in laboratories at the Earth's surface are hampered by the cosmic-ray background into detectors. The design of a 400 kV, 10 mA accelerator specially for JUNA are reported. A 2.45GHz ECR ion source is used for H<sup>+</sup> or He<sup>+</sup> beams of few tens mA magnitude and a 10GHz ECR ion source for He<sup>2+</sup> beam of few mA magnitude. The beam is accelerated by an electrostatic accelerating tube to 70~400keV for H<sup>+</sup> & He<sup>+</sup> and 150~800keV for He<sup>2+</sup>. The ion source and LEBT beam line are placed on the platform of maximum 400kV. The layout of accelerator and design considerations, such as high intensity beam accelerating, transmission, monitoring, cooling and other special features applied in the Jinping deep underground lab will be presented.

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