



## Overview of the Joint-Texas EXperimental tokamak

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The Joint-Texas EXperimental Tokamak (J-TEXT) has a major radius  $R_0 = 105$  cm and a minor radius  $a = 25$ -29 cm with a movable titanium-carbide coated graphite limiter [1,2]. It focuses on the MHD activities, disruption, turbulence and transport. Some auxiliary systems have been developed for these research topics, such as resonant magnetic perturbations (RMPs) coils system[3], massive gas injection (MGI) system[5], electrode biasing system[6], and so on. An electron cyclotron heating (ECH) system is under developing. Besides the normal diagnostics, there are also some advanced diagnostics, including three-wave far infrared laser polarimeter-interferometer[7,8], tangential X-ray imaging crystal spectrometer (XICS)[9,10], multichannel high resolution spectrometer for edge rotation velocity[11], and ECEI (being developed)[12]. Based on the above systems and diagnostics, many experiments have been performed. For example, the influence of RMPs on the MHD activities and electron density[4], the effect of the electrode biasing on tearing mode and turbulent transport[4,13,14], the behavior of runaway electrons (REs) in fast shutdown experiments with RMPs[3,4], and so on. Dedicated simulation and theoretical works have been carried out to explain the experimental results, such as the simulation for the effect of plasma with RMPs[15,16], and theoretical study of the REs production modified by the radial diffusion loss [17].

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