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Heating and Confinements by the waves in the Ion Cyclotron Range of Frequencies on EAST

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The paper summarizes the recent experiments performed with Ion Cyclotron Resonance Heating(ICRH) on EAST. Heating and confinement studies using the Hydrogen Minority Heating scheme have been investigated in Ohmic target plasma and in combination with Low Hybrid waves. Energy Confinement follows Scaling Law. The results show a typical L-mode behavior, i.e. a power dependent confinement degradation. L-mode data agree with ITER89P scaling. The ICRF heating efficiency is ~35%, rather low on EAST. One of the importance challenges for EAST is how to couple higher power into the core plasma. The experimental results show that local gas injection and reducing the k_{\parallel} improves the coupling efficiency directly. Particular efforts have been devoted to investigations of the interaction of ICRF waves with fast ions injected by Neutral beams. Third harmonic ion cyclotron resonance heating of D-beam ions have been achieved for the first time on EAST.

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