

Abstract Submitted  
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**Impact of density on ELM behaviors in the EAST tokamak<sup>1</sup>** FU-BIN ZHONG, ASIPP, USTC, LLNL, TAO ZHANG, ASIPP, XUEQIAO XU, LLNL, YUMIN WANG, FEI WEN, ASIPP, MINGFU WU, KAIXUAN YE, JIA HUANG, ASIPP, USTC, GONGSHUN LI, ASIPP, SZU, HAOMING XIANG, ASIPP, USTC, KANGNING GENG, ASIPP, SZU, XIANG GAO, ASIPP, USTC, EAST TEAM — The ELM behaviors at different densities have been researched on EAST while other parameters remain the same. The ELM frequency increases gradually with density at constant heating power. And the amplitude of ELM declines along with the rise of the frequency. The relative decrease in stored energy at high density plasma is about 25%, in comparison with the plasma at lowest density. And the confinement enhancement factor  $H_{98}$  decreases (about 40%) with density. The evolutions of pedestal density profile relate to ELM bursts have been investigated in detail. It shows that the effect of ELM bursts on density profile is slight and just locates in a very narrow region near the pedestal top at high density plasma. Also the analysis of the MHD signature and power deposition characteristics associated with ELMs have been made. The ELM characteristics at different densities will be simulated using BOUT++ code and the simulation results will be compared with experimental measurements.

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