

Abstract Submitted
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Initial results of LOC to SOC transition experiment in HL-2A tokamak¹ YI YU, School of Nuclear Sciences, University of Science and Technology of China, MIN XU, Southwestern Institute of Physics, TAO LAN, Department of Modern Physics, University of Science and Technology of China, LIN NIE, RUI KE, WULU ZHONG, ZHONGBING SHI, DONG GUO, Southwestern Institute of Physics, BODA YUAN, YIFAN WU, SHIFENG MAO, MINYOU YE, School of Nuclear Sciences, University of Science and Technology of China, HL-2A TEAM — Dedicated experiment of LOC (linear Ohmic confinement) to SOC (saturated Ohmic confinement) transition was carried out in the HL-2A tokamak during the last campaign. The line-averaged density was ramped up from $0.6 \times 10^{19}/\text{m}^3$ to $1.5 \times 10^{19}/\text{m}^3$ under limiter configuration. The energy confinement time was observed to linearly increase with density and then saturate around line-averaged density $\sim 1.0 \times 10^{19}/\text{m}^3$ (density in the core is around $2.0 \times 10^{19}/\text{m}^3$). The Shimomura density threshold was estimated as $1.9 \times 10^{19}/\text{m}^3$. A Langmuir probe array was plunged into the plasma during the whole density ramp up period, which measured the particle and momentum fluxes during the transition. Data from DBS and ECE will also be presented. The transition under divertor configuration was not found during density ramp up all the way to the density limit.

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