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Confinement Characteristics of 3D Magnetic Braking Discharges in KSTAR KIMIN KIM, HYUNSEOK KIM, JISUNG KANG, JEONGWON YOO, JUNGHEE KIM, MINJUN CHOI, JAEMIN KWON, National Fusion Research Institute — We report an investigation of the confinement of magnetic braking experiments in KSTAR. A set of discharges are developed injecting neutral beams (NBs) that supply strong toroidal torques to produce fast rotating H-mode plasmas. We utilize non-axisymmetric (3D) magnetic field to drive toroidal rotation braking and electron cyclotron heating (ECH) to explore the lowest rotation level. In those discharges, toroidal rotation over a range of 120-300km/s is achieved at the core depending on the combination of NB, 3D field, and ECH. Improved energy confinement triggered by 3D field driven toroidal rotation braking is observed, where increase of stored energy by up to 15

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