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Statistical Analysis on Particle Confinement of Hydrogenic Ions in Large Helical Device NAOTO IMAGAWA, HIROSHI YAMADA, TATSUYA YOKOYAMA, Univ of Tokyo, KATSUMI IDA, NIFS/NINS, RYUICHI SAKAMOTO, NIFS/NINS, SOKENDAI, KEISUKE FUJII, Kyoto University, MIKIROU YOSHINUMA, NIFS/NINS, GEN MOTOJIMA, NIFS/NINS, SOKENDAI, KENJI TANAKA, Kyushu University — Particle transport in NBI and ECH heated plasmas has been investigated on Large Helical Device (LHD). The control of hydrogenic isotope concentration, i.e, tritium and deuterium (D) is a critical issue to maximize fusion power output. Recently, D plasma experiment has begun in LHD, and measurement separating hydrogen (H) and D density profiles has become available by bulk charge exchange recombination spectroscopy (b-CXRS). Global particle confinement time in steady state has been compared for H, D and H/D mixture plasmas in order to characterize the isotope effect on particle transport. It has been found that the global particle confinement time deteriorates from H to D. The transient decay time of H/D ratio after H and D pellet injection has been also analyzed. In contrast to global particle confinement time, significant difference of the decay time between H and D particles has not been recognized.

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