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Production of fast plasma flows with a steady state high density plasma in TPD-SheetIV TAKAAKI IIJIMA, YUTA TANAKA, TAKUYA HASE, TOSHIKIO TAKIMOTO, AKIRA TONEGAWA, Tokai University, KOHNOSUKE SATO, Chubu Electric Power Co. Inc., KAZUTAKA KAWAMURA, Tokai University — Ion acceleration of high density sheet plasma (ca.10^{18}m^{-3}) in a non-uniform magnetic field by ion-cyclotron resonance (ICR) is investigated in a linear plasma device, TPD-Sheet IV. The radio frequency (RF) electrodes consist of two parallel plates. The ion energy along the axis of the magnetic field or in the perpendicular direction was measured using a Faraday cup. The experiment was conducted using helium gas and a discharge current of 50 A. The ion energy in the direction perpendicular to the magnetic field line increases by ion-cyclotron resonance. Ions are also accelerated along the axis of the magnetic field line due to the magnetic field gradient along the axis.

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