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EX/P8-10: Stabilization of Energetic-Ion-Driven MHD Mode by ECCD in Heliotron J

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Second harmonic electron cyclotron current drive (ECCD) has been applied in the Stellarator/Heliotron device, Heliotron J, to control rotational transform profile. Localized EC driven current at central region changes the rotational transform, making a high magnetic shear. An energetic-ion-driven MHD mode of 80 kHz has been completely stabilized when the counter EC current of more than 2 kA is driven. An experiment of scanning the EC driven current shows that there is a threshold in magnetic shear to stabilize the energetic-ion-driven MHD mode.

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