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Observation of ExB effect on contact angle of incident deuterium ion at the graphite target of the weakly magnetized plasmas NAM-KYUN KIM, J. SONG, Y. JIN, K.-B. ROH, G.-H. KIM, Seoul National University, Seoul, Korea — Many fusion researches have been considered that the ion incident angle at the first wall or the divertor surface is that of B-field line. Ahedo predicted that the ion motion should be influenced by the E-field near the plasma boundary, that is the $E \times B$ drift. To verify his prediction, the discrepancy between the ion incident angle and the angle of B-field line to the surface was investigated in this study. A weakly magnetized D_2 ECR plasma was used to investigate the ion incident angle. The ion incident angle was measured from a morphological change of a graphite target during ion irradiation, changing the B-field angle to the target surface. The B-field strength near the target was 700 gauss. Result reveals that the ion incident angle becomes 16° when the field angle is 85° , for example. The result is comparable with the estimation of the Ahedo's magnetic sheath model. With the model, it can be understood that the ion trajectory starts to deviate from the B-field line inside the presheath where the E-field start to increase. For the B-field strength of our device, however, the strong E-field inside the sheath accelerates ions only to the surface-normal direction, and no $E \times B$ drift occurs there. Details with a consideration of the B-field strength will be discussed.

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