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Tearing mode dynamics in the RFX-mod tokamak LUIGI CORDARO, PAOLO ZANCA, MATTEO ZUIN, FULVIO AURIEMMA, EMILIO MARTINES, BARBARA ZANIOL, Consorzio RFX, Corso Stati Uniti 4, Padova, Italy, GIANLUCA PUCELLA, Centro Ricerche Energia ENEA Frascati, Frascati, Italy, ROBERTO CAVAZZANA, GIANLUCA DE MASI, ALESSANDRO FASSINA, GUSTAVO GRENFELL, BARBARA MOMO, SILVIA SPAGNOLO, MONICA SPOLAORE, NICOLA VIANELLO, Consorzio RFX, Corso Stati Uniti 4, Padova, Italy — The study of the physical mechanisms that influence the tearing mode (TM) rotation is of interest because, while in present day devices, a significant TM rotation can be induced by Neutral Beam Injection, future reactors, ITER included, are not expected to provide enough induced momentum. We present a study of tearing mode dynamics in the RFX-mod device, a Reserved Field Pinch in Padua (Italy) that can be run as low-current, circular tokamak. Magnetic, flow and kinetic measurements are integrated to characterize the (2,1) and (3,2) TMs fast rotation. We are especially interested to study the role played by the diamagnetic electron drift on the TM rotation, including the slowing down and the wall-locking phases. When the latter occurs, the radial magnetic field penetrates the shell and the TM amplitude increases at a rate given by the wall resistive time constant. This phenomenon can lead to a rapid discharge termination via a disruption. A comparison of experimental data with a two-fluid MHD cylindrical model [Nucl. Fusion 54 (2014) 122001] has been used to interpret the observed TM fast rotation frequencies

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