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Development of a disruption precursor based on rotating mhd instabilities and its application to JET H-mode plasma scenario.[1] CARLO SOZZI, EDOARDO ALESSI, CNR - Istituto di Fisica del Plasma "P. Caldirola", MATTEO BARUZZO, Consorzio RFX, SERGEI GERASIMOV, CCFE, JET CONTRIBUTORS TEAM[2] — Magneto-hydrodynamic activity often precedes disruption events in tokamaks, being either the root cause for disruption or one of the last symptoms of plasma deterioration due to a different root cause. Often a locked mode is detected before the plasma termination, with a warning time useful to trigger mitigation strategies but not enough for recovery, i.e. to act to avoid the disruption. In this work we present a study of disruption precursors derived from the Singular Value Decomposition analysis of the signals of a 3-d array of pick-up coils. Such signals are sensitive to rotating magneto-hydrodynamic activity before the locking phase. The analysis has been applied to the dataset of H-mode plasma scenario being developed at JET in preparation of the DT campaign. It is shown that using this technique a reasonable good rate of right/false alarms (81%/16%) can be obtained with an extended warning time (4-7s). Moreover, since such precursors are based on the phase analysis of normalized signals they are rather insensitive to calibration problems and show a potential for more general application..

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[2]as in [F.Romanelli, Proc.25thIAEA FEC].

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