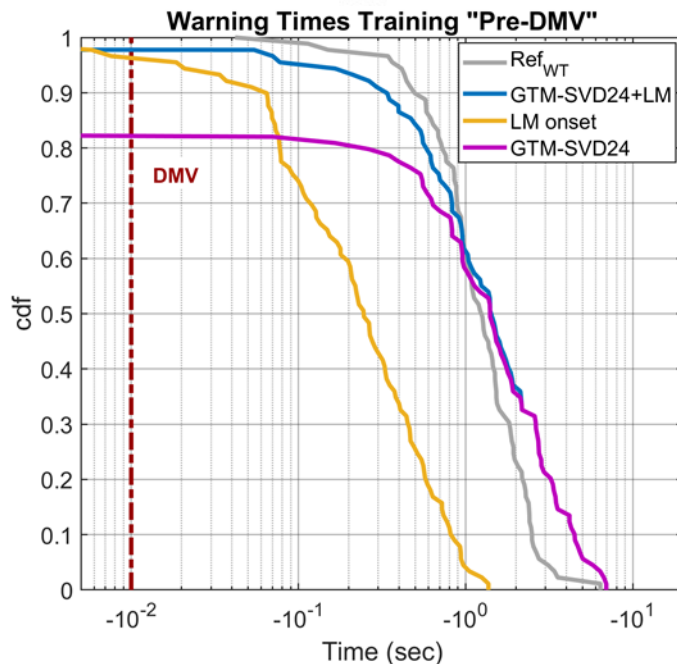
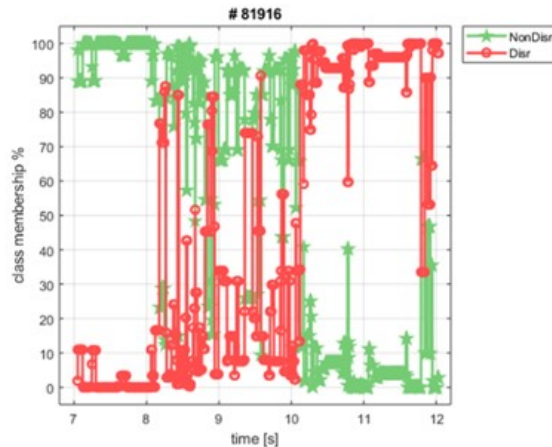


# EARLY IDENTIFICATION OF DISRUPTION PATHS FOR PREVENTION AND AVOIDANCE



% Disruptive class membership vs time



- ❑ The magnetic fluctuations associated with rotating MHD modes can be characterized using a set of observables derived from the Singular Value Decomposition algorithm applied to the data collected by an array of Mirnov coils.
- ❑ Such data provide an input to machine learning analysis such that a clustering separating disruptive and non-disruptive timeslices can be found.
- ❑ Combined with a standard amplitude Locked Mode trigger, the accumulated warning time for the detection of incoming disruptions is significantly increased ( $>1s$ ) with respect to the stand-alone LM. Extended warning time opens possibilities of disruption avoidance.
- ❑ Extension of the method to different plasma scenarios, and potential for scaling to future devices are being studied