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EX/5-2: Studies of Energetic-ion-driven MHD Instabilities in Helical Plasmas with Low Magnetic Shear

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We discuss the features of energetic-ion-driven MHD instabilities such as Alfvén eigenmodes (AEs) in three-dimensional magnetic configuration with low magnetic shear and low toroidal field period number (Np) that are characteristic of advanced helical plasmas. Comparison of experimental and numerical studies in Heliotron J with those in TJ-II indicates that the most unstable AE is global AE (GAE) in the low rotational transform (iota) configuration and helicity-induced AE (HAE) in the high iota configuration.

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