

# Instabilities of rotating plasmas in fusion and astrophysics

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Rotating plasmas are ubiquitous in astrophysics and, more recently, also in laboratory fusion devices. The theory of magnetohydrodynamic (MHD) stability of such plasmas, though initiated a long time ago (1960), has severely suffered from a wide spread misunderstanding of the source of the difficulties of the subject. This has been cured in our textbook on Advanced Magnetohydrodynamics [1] by the development of the solution path method. This tool has permitted organizing the enormous diversity of MHD instabilities of rotating tokamaks, accretion disks about compact objects, and jets emitted from those objects into a single unifying structure: *the spectral web*. I will illustrate that with recent results obtained with the new spectral code ROC.

[1] Hans Goedbloed, Rony Keppens and Stefaan Poedts, *Advanced Magnetohydrodynamics; with Applications to Laboratory and Astrophysical Plasmas* (Cambridge, 2010), Chap. 12, 13.