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Nonaxisymmetric Instabilities Driven by Star/Disk Coupling JAMES IMAMURA, WILLIAM DUMAS, University of Oregon, KATHRYN HADLEY, Oregon State University, REBECKA TUMBLIN, University of Oregon — Coupling of stellar and disk modes changes the stability properties of nonaxisymmetric modes in astrophysical systems in a variety of ways. For example, coupling drives instability in slowly rotating stars, stars otherwise stable to nonaxisymmetric instabilities (Yuan & Cassen 1985), and coupling leads to new types of nonaxisymmetric instabilities such as the one-armed modes driven by the *indirect* stellar potential discovered by Adams, Ruden, & Shu (1989). We report our investigations of star/disk coupling in which we self-consistently determine equilibrium stellar structures as well as their surrounding disks. We study two sets of models. Set 1, systems with stars in uniform rotation that are below the secular instability thresholds for barlike modes in isolated stars. Set 2, systems with stars in differential rotation where the stars are dynamically unstable to barlike modes in isolated stars. For Set 1, resolved stars do not have large effects on the most unstable modes, the $m = 1$ modes. For Set 2, star/disk coupling drives different modes in stars unstable to and stable to $m = 2$ dynamic instatbilities. For the former, stellar modes are driven unstable bydisk modes while for the latter, the stars themselves are dynamically unstable.

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