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Novel Solutions for Nonminimally Coupled D-Stars GRAHAM REID, Univ of British Columbia — D-Stars are a composite system consisting of a boson star and global monopole coupled together through gravity. As shown by Marunovic and Murkovic, when this system is modified by the presence of non-minimal coupling to gravity, the resulting solutions are able to achieve large central densities. We performed detailed simulations of this model and discovered unusual families of solutions characterized by the abrupt formation of mater shells far from the origin. For these families, the asymptotic mass of the system is no longer a smooth function of the central density as is typical of boson stars. Current work involves investigating the stability properties of these solutions through dynamical simulation.

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