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The effect of host cluster gravitational tidal forces on the internal dynamics of spiral galaxies ALEXANDER MAYER, None — New empirical observation by Bidin, Carraro, Mendez & Smith finds "a lack of dark matter in the Solar neighborhood" (2012 *ApJ* **751**, 30). This, and the discovery of a vast polar structure of Milky Way satellites by Pawlowski, Pflamm-Altenburg & Kroupa (2012 *MNRAS* **423**, 1109), conflict with the prevailing interpretation of the measured Galactic rotation curve. Simulating the dynamical effects of host cluster tidal forces on galaxy disks reveals radial migration in a spiral structure and an orbital velocity that accelerates with increasing galactocentric radial coordinate. A virtual "toy model," which is based on an Earth-orbiting system of particles and is physically realizable in principle, is available at **GravitySim.net**. Given the perturbing gravitational effect of the host cluster on a spiral galaxy disk and that a similar effect does not exist for the Solar System, the two systems represent distinct classes of gravitational dynamical systems. The observed 'flat' and accelerating rotation curves of spiral galaxies can be attributed to gravitational interaction with the host cluster; no 'dark matter halo' is required to explain the observable.

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None

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