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Effects of the passing of a caustic ring through the solar neighborhood SANKHA SUBHRA CHAKRABARTY, PIERRE SIKIVIE, Univ of Florida - Gainesville — The caustic ring model is a proposal for the full phasespace distribution of dark matter particles in the halos of isolated disk galaxies such as our own Milky Way galaxy. Self-similar time evolution of the dark matter halo implies that the caustic rings lie in the galactic disk and slowly increase their radii, expanding on cosmological time scales. As the caustic rings pass through a particular location in the galactic disk, they disturb the orbits of the stars there. If the galactic disk is initially in a relaxed state, similar to thermal equilibrium, the average values of radial and vertical velocities for sufficiently large number of stars at a given position, would vanish. Recently, position-dependent bulk velocities of the stars have been observed in the extended solar neighborhood. We investigate if a passing caustic ring may cause such perturbations in the radial and vertical bulk velocities.

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