

López-Corredoira, M.; Betancort-Rijo, J.

Azimuthal dependence of the density distribution in outer galactic discs accreting intergalactic flows. (English) [Zbl 1156.85304](#)
Astron. Astrophys. 493, No. 1, L9-L12 (2009).

Summary: Aims. The amplitude and scaleheight of the Galactic gas disc density are not axisymmetric against expectations in a self-gravity axisymmetric disc. However, this lopsidedness can be explained in terms of intergalactic accretion flows, which produce non-axisymmetric pressure on the disc. This mechanism could be also responsible for the formation of a warp.

Methods. We analytically derive the relationship between the disc density and the self-gravity and external pressure.

Results. The same scenario of accretion as we proposed years ago to explain the formation of the warp explains the azimuthal dependence of the density and its scaleheight, with minimum/maximum in the positions of maximum amplitude of the warp ($\phi \approx 95^\circ$ and 275°), as expected from its pressure distribution.

MSC:

[85A05](#) Galactic and stellar dynamics

[85A15](#) Galactic and stellar structure

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Keywords:

[galaxies: kinematics and dynamics](#); [galaxies: structure](#); [galaxy: structure](#)

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