

Origin of structures in disc galaxies: internal or external processes?

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Abstract. Disc galaxies have a number of structures, such as bars, spirals, rings, discy bulges, $m = 1$ asymmetries, thick discs, warps etc. I will summarise what is known about their origin and in particular whether it is due to an external or an internal process. The former include interactions, major or minor mergers etc, while the latter include instabilities, or driving by another component of the same galaxy, as e.g. the bar or the halo. In cases where more than one process is eligible, I will analyse whether it is possible to distinguish between different origins, and what it would take to do so. This discussion will show that, at least in some cases, it is difficult to distinguish between an internal and an external origin.
