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GRAPHICAL ANALYSIS OF A SPIRAL GALAXY ARMS: HIGHLIGHTING OF A GRAVITATIONAL FORCE IN R-3

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Abstract

The analysis of photographs received by the telescope Hubble revealing so a spiral structure of M51 AND NGC1232 galaxies, as well as the morphological structure of the Milky way Galaxy leads us to apply the conservative central movement laws in order to establish the analytical expression of the gravitational potential responsible for the preservation of this structure. A variation law in of the potential was determined. An approach of the reverse problem was considered to confirm the veracity of the adopted model. The use of the different measurements taken on the pictures allowed to prove that the approximate relation of the shape adopted in the context of the central movement is well verified. The values of b obtained are well enough grouped around the value: $b = 0.22$.

Keywords: Spiral galaxies rotation, Modelling, Characterization, Numerical simulation
