

# Gravitational Physics and Astronomy 2022



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## Estimation of distances associated with galactic flat rotation speeds

We are proposing a very simple formula for estimating galactic distances associated with flat rotation speeds. Our basic idea is that, as galactic total mass increases, galactic flat rotation speed as well as the distance associated with flat rotation speed increases. Galactic total mass can be considered as the sum of galactic baryonic mass and dark mass. Galactic core radius seems to depend on galactic baryon mass, current cosmic Hubble mass and the ratio of galactic baryon mass to total mass. Similarly, galactic flat rotation distance seems to depend on galactic total mass, current cosmic Hubble mass and the ratio of galactic baryon mass to total mass. Galactic baryon mass plays a vital role in understanding and estimating the galactic dark mass. In this study, (180 to 200) million solar masses can be considered as an upper limit of ordinary gravity. Ratio of current cosmic Hubble mass to 180 million solar masses seems to be equal to the exponential of ratio of current Hubble radius to current baryon acoustic bubble radius.

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