

Abstract Submitted
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Rotation of Spiral Galaxies Described with a Simple Disc Gravitational Model JAMES FENG, C.F. GALLO, Superconix Inc — The measured rotation velocity profiles of mature spiral galaxies are described with a simple disc gravitational model, withOUT need for large spherical halos of Dark Matter. Our approach utilizes Newtonian gravity/mechanics to search (via computer) with maximum flexibility for mass distributions that satisfy the measured rotational velocity profiles. This model utilizes a finite disc of uniform thickness but variable density. Our deduced mass distributions differ somewhat from those previously used, primarily with less mass concentrated at the center and more mass distributed toward the galactic periphery. Most previous research assumes a density maximum at the galactic center decaying exponentially with radius analogous to the measured light distribution. But this assumption is weak since the temperature is an important variable. These prior models do NOT describe the measured velocity profiles, and recourse is made to Dark Matter or gravitational deviations to compensate. By contrast, our results indicate no Dark Matter and no deviations from simple gravity.

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