

Abstract Submitted  
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**A 1-dim Formulation of Modified Newtonian Dynamics** RONALD MICKENS, Clark Atlanta University — In 1983, Mordehai Milgrom published three papers providing reasons why dark matter is not required to explain galactic rotation curves (Astrophysical Journal, Vol. 270, 365-389). His explanation was based on a modified Newtonian dynamics (MOND). We examine a specific MOND and solve the equations of motion for four 1-space dimension problems: the free particle, a particle acted on by a constant force, a particle under the influence of linear damping, and the simple harmonic oscillator. Our MOND allows the first three problems to be solved exactly. These calculations indicate that our formulation of MOND may give the correct proper extension of standard nonrelativistic Newtonian dynamics.

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