

Abstract Submitted
for the CAL09 Meeting of
The American Physical Society

Theoretical Derivation of Equations Governing the Coupled Distributions of Dark and Baryonic Matters JACQUES LEIBOVITZ — A dark matter (DM) particle is yet to be detected. Milgrom's modified Newton dynamics (MOND) successfully models much of the observed DM phenomena. Unfortunately, the modification conflicts with general relativity. Exploring here an alternative model of DM leads to the sequential derivation of an equation of state (EoS) for such DM in a gravitation field, of an equation governing the coupled distributions of DM and baryonic matter around galaxies, of galactic flat rotation curves, of the Pioneer anomaly, of a Tully-Fisher relation, of a possible mechanism of black hole formation at the center of a large galaxy, and of Milgrom's MOND relation. The conflict between the PA and the Viking ranging data is resolved in an appendix. Results are discussed.

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Date submitted: 01 Sep 2009

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