Conservative Transformation Group: Dark Matter Halos ED-
WARD GREEN, University of North Georgia — Pandres has proposed a theory
which extends the geometrical structure of a real four-dimensional space-time via
a field of orthonormal tetrads with an enlarged transformation group. This new
transformation group, called the conservation group, contains the group of diffeo-
morphisms as a proper subgroup and we hypothesize that it is the foundational
group for quantum geometry. The fundamental geometric object of the new geome-
try is the curvature vector, C_μ. Using the scalar Lagrangian density, $C^\mu C_\mu \sqrt{-g}$ field
equations for the free field have been obtained which are invariant under the conser-
vation group. We present spherically symmetric solutions for the corresponding free
field and a solution similar to the external Schwarzschild solution is obtained. The
theory implies that the external stress-energy tensor has non-compact support and
hence may give the geometrical foundation for dark matter. Flat velocity curves are
obtained under suitable thermodynamic conditions.

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