1057-35-73   **David M Ambrose***, 3141 Chestnut Street, Philadelphia, PA 19104, and **J. Douglas Wright**.
Weak Solutions and Traveling Waves for Some Equations with Nonlinear Dispersion. Preliminary report.

Equations with nonlinear dispersion, such as the Rosenau-Hyman compacton equations, exhibit very different behavior from equations with linear dispersion, such as the KdV equation. For instance, equations with nonlinear dispersion can possess compactly supported traveling waves, or can be positivity preserving. Unfortunately, there is very little existence theory for such equations. We present new examples of such equations which do possess compactly supported traveling waves and for which the existence of weak solutions can be proved. (Received January 06, 2010)