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Well-posedness and ill-posedness results for equations with nonlinear and/or degenerate dispersion.

Equations with nonlinear and/or degenerate dispersion, such as the Dym equation and Rosenau-Hyman compacton equations, have been investigated for their integrable structures and coherent structures such as compactly supported traveling waves. With J. Douglas Wright, Gideon Simpson, and Dennis Yang, we have complemented the results in the literature by proving ill-posedness and well-posedness results. These equations may be ill-posed when the data can change sign, and may be well-posed for initial data of a fixed sign. (Received September 18, 2017)