1002-35-18 **Eitan Tadmor*** (`tadmor@cscamm.umd.edu`), Center for Sci. Computation & Math Modeling, CSIC Bldg. #406, University of Maryland, College Park, MD 20742. *Burgers-type equations with vanishing hyper-viscosity.*

We discuss the dynamical properties of various hyper-viscous scalar models, $u_t + f(u)_x = Q_\epsilon(u, \partial_x)$ which do not admit the classical framework of Krushkov entropy pairs. Examples range from convolution models of the type $Q_\epsilon(u, \partial_x) = 1/\epsilon(Q_\epsilon * u - u)$ to the vanishing hyper-viscosity, $Q_\epsilon(u, \partial_x) = -1/\epsilon P(i\epsilon\partial_x)u$. In particular, the hyper-viscosity case, $P(i\partial_x) = (i\partial_x)^{2s}$ with $s > 1$, lacks the monotonicity which underlines the Krushkov BV theory in the viscous case with $s = 1$. Instead we show how to adapt the Tartar-Murat compensated compactness theory together with a weaker entropy dissipation bound to conclude the convergence of the vanishing hyper-viscosity. (Received June 20, 2004)

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