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Robert Hardt* (hardt@rice.edu), Mathematics Department, Rice University, PO Box 1892, Houston, TX 77251-1892, and **Rolf Ryham** (ryham@rice.edu). *Some Remarks on Total Variation Flow*. Preliminary report.

In 1994, R.Hardt and X.Zhou studied the heat equation $u_t = \operatorname{div}_x[F_p(Du)]$ corresponding to a convex function F with linear growth at ∞ . For an initial, Dirichlet boundary-value problem, they established existence in $L^2([0, T], BV)$, a comparison principle, continuity in time, and minimality of the unique time asymptotic limit. Earlier in 1992, E.Fatemi, S.Osher, and L.Rudin had numerical results for the special case of TV flow where $F(p) = |p|$. The last 10 years has seen numerous applications to imaging of the TV flow and its relatives. Here, we examine carefully specific examples and look for further regularity properties and associated constrained problems. (Received February 26, 2009)