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Katarzyna Saxton and **Ralph Saxton*** (rsaxton@uno.edu), Department of Mathematics,
University of New Orleans, New Orleans, LA 70148. *Damping in Hyperbolic Equations with
Parabolic Degeneracy.*

We examine the effect of damping on a nonstrictly hyperbolic 2×2 system. It is shown that the growth of singularities is not restricted as in the strictly hyperbolic case where dissipation can be strong enough to preserve the smoothness of small solutions globally in time. Here, irrespective of the stabilizing properties of damping, solutions are found to break down in finite time on a line where two eigenvalues coincide in state space. (Received September 14, 2010)