1077-35-2206 **Katarzyna Saxton*** (saxton@loyno.edu), Dept. of Mathematical Sciences, Loyola University, New Orleans, LA 70118. *Singularity Formation in Nonstrictly Hyperbolic Equations.*

We consider a 2 x 2 system for which, at some point (b, 0), the initial data intersect curves on which two characteristics coincide. Given that the system is genuinely nonlinear, one such curve on which the speed of both characteristics is zero will become the line x=b. We exam singularity formation along this line and prove that the solution breaks down in finite with or without damping. It is shown that, unlike the case for strictly hyperbolic systems, dissipation is not strong enough to preserve smoothness of small solutions globally in time. We will give an example of two further branches of curves starting at (b,0), in addition to the line x=b, where characteristics speeds are equal. The consequences of this phenomenon will be discussed. (Received September 21, 2011)