1046-35-636 **Misha Perepelitsa*** (mikhail.perepelitsa@vanderbilt.edu), 1326 Stenvenson Center, Vanderbilt University, Nashville, TN 37240, and **David Hoff**, 831 East 3rd St, Rawles Hall, Indiana University, Bloomington, IN 47405. *Instantaneous boundary tangency and cusp formation in two-dimensional fluid flows.*

We show that, for solutions of a model of two-dimensional, viscous, compressible fluid flow, curves which are initially transverse to the spatial boundary and across which the fluid density is discontinuous become tangent to the boundary instantaneously in time. We also show by similar techniques that, for the Euler equations of two-dimensional, inviscid, incompressible flow and for a large class of initial data corresponding to vortex patches with corners, these corner singularities become cusp-like instantaneously in time. (Received September 09, 2008)