## Approaching an acnode



The curves in Approaching an acnode, Passing a crunode, and On the cusp are quartic curves which all visit the same two points twice, i.e. they come from the same pencil (family) of curves with two singular base points.

In Approaching an acnode the two curves, red and blue, both have two components. The naked eye can't distinguish the components on the left. However, the ones on the right are quite distinct. Like in Singular wave a catastrophe is about to happen, the red blob shrinks into a point called an acnode, then vanishes into thin air.