initial data:

$$\psi(x,0) = sin(2\pi x) \tag{0.1}$$

speed function:

$$F(K) = -K \tag{0.2}$$

mean curvature:

$$K = (\psi_{yy}\psi_x^2 - 2\psi_x\psi_y\psi_{xy} + \psi_{xx}\psi_y^2)/(\psi_x^2 + \psi_y^2)^{3/2} \tag{0.3}$$

equation of motion:

$$\psi_t + F_0 H(\nabla\psi) + F_1(K)H(\nabla\psi) = 0 \tag{0.4}$$

$$F_0 = 0 \tag{0.5}$$

$$F_1 = -K \tag{0.6}$$

A von Neuman stability analysis showed the above PDE unstable for a FTCS scheme. More complicated schemes, something like a combo explicit implicit scheme (an averaged Crank-Nicholson method) get messy with the coupled terms. Investigating parabolic equation solvers, presently. A plot on the previous page has been included. This plot was done with a FTCS, at very small time steps ($\Delta = 0.0005$) as suggested by Prof. Osher in an email correspondence. The plot does not mimic Prof. Osher's results. Work is in progress.