1067-53-193   **Paul T Allen** (`ptallen@lclark.edu`), Department of Mathematical Sciences, Lewis & Clark College, 0615 SW Palatine Hill Road, Portland, OR 97219, and **Adam Layne** (`anlayne@gmail.com`) and **Katharine Tsukahara*** (`krtsukahara@gmail.com`). *Distance comparison and the Dirichlet problem for curve shortening flow in convex domains.* Preliminary report.

The curve shortening flow, which evolves a curve in the normal direction with velocity proportional to its curvature, has been explored extensively for curves in the Euclidean plane. It is known that embedded, closed curves shrink to round points in finite time. The case of curves with fixed endpoints remains largely unexamined. In this setting a distance comparison theorem for plane curves due to Huisken can be used to investigate the long-time behavior of curves with fixed endpoints in convex regions of the plane. We also extend the distance comparison theorem to the case of curves on the sphere, where it can be used to analyze curves in convex regions. (Received July 29, 2010)