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Motion of Closed Curves by Singular Weighted Mean Curvature

We study evolution of simple closed curves, driven by the driven singular weighted mean curvature (wmc) with forcing, i.e. $\beta V = \kappa_\gamma + \sigma$. The weighted mean curvature κ_γ is so singular that the closed curves with constant curvature (i.e spheres) are rectangles.

We construct variational solutions of the flow when the initial data are from a class of perturbed constant curvature curves. We follow the evolution of facets. We discuss the question of uniqueness of solutions.