1057-35-376   **Alex Freire*** (`freire@math.utk.edu`), Mathematics Department, University of Tennessee, Knoxville, TN 37996. *Mean Curvature Motion of Triple Junctions of Graphs.*

We consider a system of three surfaces, graphs over a bounded domain in $\mathbb{R}^2$, intersecting along a time-dependent curve and moving by mean curvature while preserving the pairwise angles at the curve of intersection (equal to $2\pi/3$.) This defines a two-dimensional parabolic free boundary problem, for which we prove short-time existence of classical solutions (for sufficiently regular initial data satisfying a compatibility condition). For the corresponding symmetric problem (a graph over a time-dependent domain intersecting $\mathbb{R}^n$ at a constant angle and moving by mean curvature) there are also results on long-time behavior. (Received January 26, 2010)