Abstract

Consider a bounded solution $f$ of the prescribed mean curvature equation over a bounded domain $\Omega \subset \mathbb{R}^2$ which has a corner at which has a corner at $(0,0)$ of size $2\alpha$ and assume the mean curvature of the graph of $f$ is bounded. If the corner is non-convex/reentrant (i.e. $\alpha \in (\pi/2, \pi)$), then the radial limits

$$R f(\theta) \lim_{r \to 0} f(r \cos \theta, r \sin \theta)$$

exist for all interior directions (e.g. $\theta \in (-\alpha, \alpha)$ if $\theta = \pm \alpha$ are tangent rays to $\partial \Omega$ at $(0,0)$), no matter how wild is the trace of $f$ on $\partial \Omega$. If the corner is convex (i.e. $\alpha \in (0, \pi)$) and some extra conditions are satisfied then the radial limits at $(0,0)$ from interior directions continue to exist. This generalizes, for example, known results about radial limits of capillary surfaces.