The asymptotic behaviour of surfaces with prescribed mean curvature near meeting points of fixed and free boundaries

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Abstract. We study the shape of stationary surfaces with prescribed mean curvature in the Euclidean 3-space near boundary points where Plateau boundaries meet free boundaries. In deriving asymptotic expansions at such points, we generalize known results about minimal surfaces due to G. Dziuk. The main difficulties arise from the fact that, contrary to minimal surfaces, surfaces with prescribed mean curvature do not meet the support manifold perpendicularly along their free boundary, in general.