Hypersurfaces with free boundary and large constant mean curvature: concentration along submanifolds

MOUHAMED MOUSTAPHA FALL AND FETHI MAHMOUDI

Abstract. Given a domain Ω of $\mathbb{R}^{m+1}$ and a k-dimensional non-degenerate minimal submanifold K of $\partial\Omega$ with $1 \leq k \leq m - 1$, we prove the existence of a family of embedded constant mean curvature hypersurfaces in Ω which as their mean curvature tends to infinity concentrate along K and intersecting $\partial\Omega$ perpendicularly along their boundaries.