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Higher codimension isoperimetric problems

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Abstract. We consider a variational problem for submanifolds $Q \subset M$ with nonempty boundary $\partial Q = K$. We propose the definition that the boundary K of any critical point Q have constant mean curvature, which seems to be a new perspective when $\dim Q < \dim M$. We then construct small nearly-spherical solutions of this higher codimension CMC problem; these concentrate near the critical points of a certain curvature function.

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