

Angenent, Sigurd B.**Curve shortening and the topology of closed geodesics on surfaces.** (English) Zbl 1137.53330
Ann. Math. (2) 162, No. 3, 1187-1241 (2005).

Summary: We study “flat knot types” of geodesics on compact surfaces M^2 . For every flat knot type and any Riemannian metric g we introduce a Conley index associated with the curve shortening flow on the space of immersed curves on M^2 . We conclude existence of closed geodesics with prescribed flat knot types, provided the associated Conley index is nontrivial.

MSC:[53C22](#) Geodesics in global differential geometry[58D10](#) Spaces of embeddings and immersions[53C44](#) Geometric evolution equations (mean curvature flow, Ricci flow, etc.)
(MSC2010)Cited in **1** ReviewCited in **8** Documents**Keywords:**

flat knot types; compact surfaces; Conley index

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