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Chris Arettines* (chris.aretines@gmail.com), NY. *Algorithmic solutions to topological questions about closed geodesics on surfaces.*

Given a closed curve presented as a word in the fundamental group of a surface, we will present an algorithm which determines a configuration for the curve which self-intersects minimally, and an algorithm which determines whether the complement of the curve is a disjoint union of topological disks. We will then show how these algorithms can be used to investigate various questions related to closed geodesics. (Received February 02, 2016)