In this paper we present a method for approximating cut loci for a given point \( p \) on Riemannian 2D manifolds, closely related to the notion of Voronoi diagrams. Our method finds the cut locus by advecting a front of points equally distant from \( p \) along the geodesics originating at \( p \) and finding the lines of self-intersections of the front in the parametric space. This becomes possible by using the deformable simplicial complexes (DSC, [1]) method for deformable interface tracking. DSC provide a simple collision detection mechanism, allows for interface topology control, and does not require the domain to have disk topology. We test our method for tori of revolution and compare our results to the benchmark ones from [2]. The method, however, is generic and can be easily adapted to construct cut loci for other manifolds of genera other than 1.