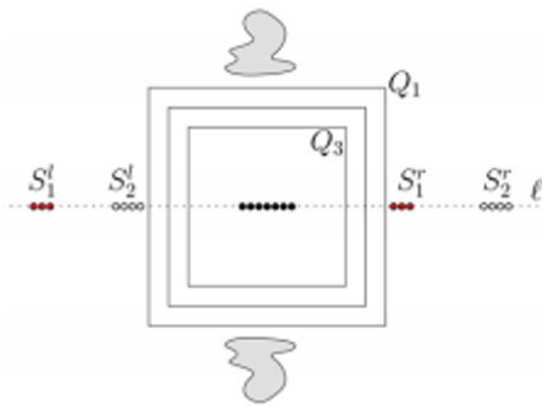


# Higher-Order Voronoi Diagrams on Triangulated Surfaces

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We study the complexity of higher-order Voronoi diagrams on triangulated surfaces under the geodesic distance, when the sites may be polygonal domains of constant complexity. More precisely, we show that on a surface defined by  $n$  triangles the sum of the combinatorial complexities of the order- $j$  Voronoi diagrams of  $m$  sites, for  $j=1, \dots, \lfloor \frac{k}{2} \rfloor, \dots, k$ , is  $O(k^2 n^2 + k^2 m + knm)$ , which is asymptotically tight in the worst case.