CLASSIFICATION OF GENERIC SPHERICAL QUADRILATERALS

ANDREI GABRIELOV

A spherical polygon is a surface homeomorphic to a closed disk equipped with a Riemannian metric of constant positive curvature, with conic singularities on the boundary. Classification of generic spherical triangles goes back to Klein (1890). Non-generic spherical triangles were classified by Eremenko (2004). Spherical quadrilaterals with the sides on either two or three circles were classified by Eremenko et al (2014-16). Classification of generic spherical quadrilaterals (with the sides on 4 distinct great circles) was completed in (AG 2023). The space of generic quadrilaterals with prescribed angles at the corners consists of finitely many open curves. At the endpoints of these curves, quadrilaterals may degenerate, or converge to a spherical quadrilateral with the sides on a four-circle configuration with a triple intersection. In the latter case, the family extends beyond the quadrilateral with the triple intersection to another one-parametric family of generic spherical quadrilaterals.