Cantor-Bendixson rank of meromorphic differentials

Abstract:

Meromorphic differentials define flat metrics with singularities on Riemann surfaces. Directions of geodesic segments between singularities are a closed subset of the circle. The Cantor-Bendixson rank of their set of directions is a descriptive set-theoretic measure complexity. Drawing on a previous work of David Aulicino, we prove a sharp upper bound that depends only on the genus of the underlying topological surface.