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Matti Vuorinen* (vuorinen@utu.fi), University of Turku, Turku, Finland. *Isoperimetric problems for condenser capacity.*

We study the conformal capacity $\text{cap}(G, E)$ of a planar condenser (G, E) where $G \subset \mathbb{R}^2$ is a domain and $E \subset G$ is compact. We use numerical conformal mapping methods developed by M. M.S. Nasser during the past two decades, based on boundary integral equations and the fast multipole method. Numerical study of isoperimetric problems for condenser capacity is our goal: the analytic tools are domain functionals expressed in terms of *hyperbolic geometry*. In addition, we study computation of moduli of quadrilaterals in simply connected domains bounded by circular arcs. (Received August 24, 2021)