INNER DISTANCE AND METRIC REMOVABILITY IN PLANAR DOMAINS

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ABSTRACT. The inner distance between two points inside a domain is defined as the infimum over lengths of curves connecting the points inside the domain. In the case of a bounded planar domain with boundary having finite one-dimensional Hausdorff measure, the inner distance is bounded from above by the measure of the union of those connected components of the boundary that have positive measure. Towards explaining how such a result is obtained, we will look at sharp estimates on the Painlev length of continuums and general compact sets, and the metric removability of the totally disconnected part of the boundary. The talk is based on joint works with Kalmykov and Kovalev, and Lučić and Pasqualetto.

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