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Aula petita del CRM.

Carathéodory domains, their conformal mappings and applications**KONSTANTIN FEDOROVSKIY**

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ABSTRACT: A bounded domain is called a Carathéodory domain if $\partial\Omega = \partial\Omega_\infty$, where Ω_∞ is the bounded connected component of the set $\overline{\mathbb{C}} \setminus \overline{\Omega}$. If Ω is a Carathéodory domain, then Ω is simply connected and $\Omega = \overline{\Omega}^o$. In the talk it is planned to discuss several classical and recently discovered properties of Carathéodory domains and conformal mappings from Carathéodory domains onto the unit disk. In particular, new useful generalizations of Carathéodory kernel and extension theorems for Carathéodory domains with accessible boundaries will be presented. It is also planned to discuss properties of Carathéodory compact sets, especially related with the structure of measures, orthogonal to rational functions on Carathéodory compact sets.