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Regularity for area minimizing integral currents

We will explore the state of the art in interior and boundary regularity for solutions of the oriented Plateau problem, specifically in the framework of integral currents. After reviewing recent developments in interior regularity, we will shift our focus to the boundary setting. In this context, we will discuss the types of boundary points that naturally arise in the theory and introduce highly singular behaviors. We will then present some of the latest results on boundary regularity and highlight open problems that remain unsolved. Following this, we will outline the key ideas behind the proof of a Hausdorff dimension estimate for the boundary singular set, particularly in the linearized setting for multi-valued Dirichlet minimizers. This talk is based on joint work with Ian Fleschler and, separately, with Stefano Nardulli.

Presenter: RESENDE, Reinaldo (Carnegie Mellon University)