

The Cauchy-Riemann equations on non-smooth domains

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Abstract: The Cauchy-Riemann operator for domains with smooth boundary has been studied extensively. Much less is known for the solvability or regularity for the Cauchy-Riemann equations on a domain in a complex manifold with non-smooth boundary. We will discuss some recent progress on the Cauchy-Riemann equations on domains on non-smooth domains in the Euclidean space or a complex manifold. This includes results on domains with Lipschitz boundary or only rectifiable boundary. In particular, we will discuss some recent results with Debraj Chakrabarti for the Sobolev regularity of $\bar{\partial}$ on the Hartogs triangle.