BOUNDARY BEHAVIOR OF GENERALIZED ANALYTIC FUNCTIONS

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Abstract: We describe some new results on boundary properties of the solutions of the elliptic equation $a(z)\partial_z u + b(z)\partial_{\bar{z}} u + A(z)u + B(z)\bar{u} = 0$ under the assumption that $a$ and $b$ are Hölder continuous and $A$ and $B$ are in $L^p$ for some $p > 2$. These properties include the $H^p$ property, the F. and M. Riesz property and the Rudin-Carleson property. When $a \equiv 1$ and $b \equiv 0$ the equation is known as Vekua’s equation and the solutions are called generalized analytic functions. These are results obtained in collaboration with Shif Berhanu from Temple University.