A Remark on Extensions of CR Functions from Hyperplanes

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Abstract. In the characterization of the range of the Radon transform, one encounters the problem of the holomorphic extension of functions defined on $\mathbb{R}^2 \setminus \Delta_{\mathbb{R}}$ (where $\Delta_{\mathbb{R}}$ is the diagonal in $\mathbb{R}^2$) and which extend as "separately holomorphic" functions of their two arguments. In particular, these functions extend in fact to $\mathbb{C}^2 \setminus \Delta_{\mathbb{C}}$ where $\Delta_{\mathbb{C}}$ is the complexification of $\Delta_{\mathbb{R}}$. We take this theorem from the integral geometry and put it in the more natural context of the CR geometry where it accepts an easier proof and a more general statement. In this new setting it becomes a variant of the celebrated "edge of the wedge" theorem of Ajrapetyan and Henkin.