

The Isotonic Cauchy Transform

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Abstract. Starting with an integral representation for the class of continuously differentiable solutions $f : \mathbb{R}^{2n} \rightarrow \mathbb{C}_{0,n}$ of the system

$$\partial_{\underline{x}_1} f + i\tilde{f}\partial_{\underline{x}_2} = 0,$$

where $\mathbb{C}_{0,n}$ is the complex Clifford algebra constructed over \mathbb{R}^n , $\underline{x}_1, \underline{x}_2$ are some suitable Clifford vectors and $\partial_{\underline{x}_1}, \partial_{\underline{x}_2}$ their corresponding Dirac operators, we define the isotonic Cauchy transform and establish the Sokhotski-Plemelj formulae. Some consequences of this result are also derived.

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