On Closed Ideals in a Certain Class of Algebras of Holomorphic Functions

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Abstract. We recently introduced a weighted Banach algebra $\mathcal{A}_{G}^{n}$ of functions which are holomorphic on the unit disc $\mathbb{D}$, continuous up to the boundary and of the class $C^{(n)}$ at all points where the function $G$ does not vanish. Here, $G$ refers to a function of the disc algebra without zeros on $\mathbb{D}$. Then we proved that all closed ideals in $\mathcal{A}_{G}^{n}$ with at most countable hull are standard. In the present paper, on the assumption that $G$ is an outer function in $C^{(n)}(\overline{\mathbb{D}})$ having infinite roots in $\mathcal{A}_{G}^{n}$ and countable zero set $h(G)$, we show that all the closed ideals $I$ with hull containing $h(G)$ are standard.