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Universal Taylor Series in Simply Connected Domains

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Abstract. Let Ω be a simply connected domain in $\mathbb{C}$. For a function f holomorphic in Ω let $S_n(f,\zeta)$ denote the partial sum of the Taylor development of f with center $\zeta \in \Omega$. We show that generically overconvergence phenomena of $S_n(f,\zeta)$ and their derivatives can occur on the boundary $\partial\Omega$ or in parts of it. In the rest of the boundary $\partial\Omega$, the universal function f may be smooth. These parts of the boundary do not have to be connected.

Keywords. Generic property, overconvergence, Taylor series, natural boundary, universal functions.

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