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On isometries of the Carathéodory and Kobayashi metrics on strongly pseudoconvex domains

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Abstract. Let Ω_1 and Ω_2 be strongly pseudoconvex domains in \mathbb{C}^n and $f : \Omega_1 \rightarrow \Omega_2$ an isometry for the Kobayashi or Carathéodory metrics. Suppose that f extends as a C^1 map to $\bar{\Omega}_1$. We then prove that $f|_{\partial\Omega_1} : \partial\Omega_1 \rightarrow \partial\Omega_2$ is a CR or anti-CR diffeomorphism. It follows that Ω_1 and Ω_2 must be biholomorphic or anti-biholomorphic.

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