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Conformal equivalence of visual metrics in pseudoconvex domains

Abstract: We will present recent joint work with Enrico Le Donne (Jyvaskyla) in which we refine estimates introduced by Balogh and Bonk, to show that the boundary extensions of isometries between smooth strongly pseudoconvex domains in $\mathbb{C}^n$ are conformal with respect to the sub-Riemannian metric induced by the Levi form. As a corollary we obtain an alternative proof of a result of Fefferman on smooth extensions of biholomorphic mappings between pseudoconvex domains. The proofs are inspired by Mostow’s proof of his rigidity theorem and are based both on the asymptotic hyperbolic character of the Kobayashi or Bergman metrics and on the Bonk-Schramm hyperbolic fillings.