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Rigidity of CR morphisms between compact strongly pseudoconvex CR manifolds. (English)

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Summary: Let $X_1$ and $X_2$ be two compact strongly pseudoconvex CR manifolds of dimension $2n - 1 \geq 5$ which bound complex varieties $V_1$ and $V_2$ with only isolated normal singularities in $\mathbb{C}^{N_1}$ and $\mathbb{C}^{N_2}$ respectively. Let $S_1$ and $S_2$ be the singular sets of $V_1$ and $V_2$ respectively and $S_2$ is nonempty. If $2n - N_2 - 1 \geq 1$ and the cardinality of $S_1$ is less than 2 times the cardinality of $S_2$, then we prove that any non-constant CR morphism from $X_1$ to $X_2$ is necessarily a CR biholomorphism. On the other hand, let $X$ be a compact strongly pseudoconvex CR manifold of dimension 3 which bounds a complex variety $V$ with only isolated normal non-quotient singularities. Assume that the singular set of $V$ is nonempty. Then we prove that any non-constant CR morphism from $X$ to $X$ is necessarily a CR biholomorphism.

MSC:

32V99 CR manifolds
32S20 Global theory of complex singularities; cohomological properties
14E20 Coverings in algebraic geometry

Keywords:

strongly pseudoconvex CR manifold; rigidity of CR morphism; geometric genus of compact embeddable CR manifold

Full Text: DOI

References:


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