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Non-negativity of CR Paneitz operator for embeddable CR manifolds

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Abstract

The CR Paneitz operator, which is a fourth-order CR invariant differential operator, plays a crucial role in three-dimensional CR geometry; it is closely related to global embeddability, the CR positive mass theorem, and the logarithmic singularity of the Szegő kernel. In this talk, I will show that, for embeddable CR manifolds, the CR Paneitz operator is non-negative, and its kernel consists of CR pluriharmonic functions. I will also give some applications of this result to CR geometry. This talk is based on the preprint [arXiv:1908.07672](https://arxiv.org/abs/1908.07672).