

# The log term of the Bergman kernel and the slice theorem for CR structures

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## Abstract

Fefferman showed that the Bergman kernel of a strictly pseudoconvex domain has logarithmic singularity, which vanishes for the ball. A natural conjecture is that the log term vanishes only when the domain is biholomorphic to the ball. For domains in  $\mathbb{C}^2$ , the conjecture was confirmed 30 years ago by Robin Graham and Dan Burns. On the other hand, for higher dimensions, counter examples are found for domains in complex manifolds which are not Stein. In this talk, I give a positive result on the conjecture. Using a slice theorem of CR structures on the sphere (after Bland–Duchamp), I confirm the conjecture in general dimensions for the domains which are sufficiently close to the ball.