Bergman kernel asymptotics in complex geometry and geometric quantization theory

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Abstract

The study of Bergman kernel plays an important role in several complex variables, complex geometry and mathematical physics.

In the first part of this talk, I will explain why "Bergman kernel" is important and introduce some of my results about Bergman kernel asymptotic expansions. In the second part of this talk,I will talk about geometric quantization theory. Recently, joint with Rung-Tzung Huang, Xiaonan Ma and George Marinescu, we developed "Bergman kernel method" to study "quantization commutes with reduction problems" in various geometric situations. I will explain this Bergman kernel method in some simple situation.