KÄHLER-EINSTEIN BERGMAN METRICS ON PSEUDOCONVEX DOMAINS OF DIMENSION TWO

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Abstract: We prove that a two dimensional pseudoconvex domain of finite type with a Kähler-Einstein Bergman metric is biholomorphic to the unit ball. This answers an old question of Yau for such domains. The proof relies on asymptotics of derivatives of the Bergman kernel along critically tangent paths approaching the boundary, where the order of tangency equals the type of the boundary point being approached. Joint work with M. Xiao.