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John Treuer*, 340 Rowland Hall (Bldg.# 400), University of California, Irvine, Irvine, CA 92697-3875, Los Angeles, CA. *Characterization of minimal domains of the Bergman kernel in the complex plane using complex analysis of one variable.*

Let $\Omega \subset \mathbb{C}$ be a domain, $K(\cdot, \cdot)$ equal the Bergman kernel of Ω , and $v(\Omega)$ denote the Euclidean volume of Ω . A minimal domain for the Bergman kernel is a bounded domain such that $K(z, z_0) = v(\Omega)^{-1}$ for all $z \in \Omega$. In 2020, Dr. Xin Dong and I characterized the minimal domains in the complex plane by showing that they are disks minus relatively closed polar sets. In our proof we used the Suita conjecture (now a theorem), which is a very deep result proved by Guan and Zhou using L^2 -methods of several complex variables. Since my and Dr. Dong's theorem is about domains in the complex plane, it would be desirable to remove the Suita conjecture from our proof and only use techniques of complex analysis of one variable. In this talk, I will provide a new proof of the characterization of minimal domains in \mathbb{C} , which only uses complex analysis of one variable. I will also discuss generalizations of this result to higher dimensions. (Received August 31, 2020)