

On the Suita conjecture

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N. Suita conjectured in 1972 that for domains Ω in \mathbb{C} and $z \in \Omega$ one has $c_\Omega(z)^2 \leq \pi K_\Omega(z, z)$, where $c_\Omega(z)$ is the logarithmic capacity of (the complement of) Ω with respect to z and K_Ω the Bergman kernel. T. Ohsawa in 1995 showed the estimate $c_\Omega(z)^2 \leq 750\pi K_\Omega(z, z)$ using the methods of the $\bar{\partial}$ -equation, similar to the ones used in the proof of the Ohsawa-Takegoshi extension theorem. We will present the following improvement of the Ohsawa estimate: $c_\Omega(z)^2 \leq 2\pi K_\Omega(z, z)$. The main tool will be the estimate for the kernel of the weighted complex Laplacian due to B. Berndtsson. We will also discuss possible generalizations both to several complex, as well as real variables.