1147-32-846   **Xin Dong*** (`xin.dong@uci.edu`), 510P Rowland Hall, University of California, Irvine, CA 92697.
Equality in Suita's conjecture. Preliminary report.

For any open Riemann surface X admitting Green functions, Suita asked about the precise relations between the Bergman kernel and the logarithmic capacity. It was conjectured that the Gaussian curvature of the Suita metric is bounded from above by -4, and moreover the curvature is equal to -4 at some point if and only if X is conformally equivalent to the unit disc less a (possible) closed polar subset. After the contributions made by Błocki, Guan & Zhou and Berndtsson & Lempert, we provide a new proof of the equality part in Suita's conjecture by using the plurisubharmonic variation properties of the Bergman kernels. Moreover, we find that the above equality condition is equivalent to both the uniqueness in the optimal L^2 extension theorems and the harmonicity in the variations of Bergman kernels. (Received January 29, 2019)