

BOUNDARY HÖLDER REGULARITY FOR ELLIPTIC EQUATIONS

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Time: Wed, Apr 21, 14:00-15:00

Tencent ID : 957 229 954

Abstract: This talk investigates the relation between the boundary geometric properties and the boundary regularity of the solutions of elliptic equations. In particular, we prove by a new unified method the pointwise boundary Hölder regularity under proper geometric conditions. “Unified” means that our method is applicable for the Laplace equation, linear elliptic equations in divergence and non-divergence form, fully nonlinear elliptic equations, the p -Laplace equations and the fractional Laplace equations etc. In addition, these geometric conditions are quite general. The key observation in the method is that the strong maximum principle and a scaling argument leads to the Hölder regularity.