

Remez inequalities for solutions of elliptic PDEs

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The Remez inequality for polynomials quantifies the way the maximum of a polynomial over an interval is controlled by its maximum over a subset of positive measure. The coefficient in the inequality depends on the degree of the polynomial; the result also holds in higher dimensions.

We give a version of the Remez inequality for solutions of second order linear elliptic PDEs and their gradients. In this context, the degree of a polynomial is replaced by the Almgren frequency of a solution. We discuss other results on quantitative unique continuation for solutions of elliptic PDEs and their gradients and give some applications for the estimates of eigenfunctions for the Laplace-Beltrami operator. The talk is based on a joint work with A. Logunov.