Boundary regularity for quasiminimizers

A function u is a quasiminimizer in a domain $\Omega \subset \mathbf{R}^n$ if

$$\int_{\{\varphi \neq 0\}} |\nabla u|^p \, dx \leq \int_{\{\varphi \neq 0\}} |\nabla (u + \varphi)|^p \, dx$$

for all $\varphi \in C_0^\infty(\Omega)$. Quasiminimizers provide a unified treatment of variational integrals, elliptic equations and quasiregular mappings, and share many (though not all) properties with p-harmonic functions. At the same time, for example the comparison principle fails for them.

In the talk, we discuss some concrete pointwise estimates for quasiminimizers and obtain a Wiener type condition for their boundary regularity. It is also shown by examples that some of the estimates are sharp.