Hölder-regularity for asymptotically elliptic operators

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October 13, 2017

Abstract

In this talk we address fully nonlinear equations driven by asymptotically elliptic operators. We prove local estimates for the solutions in Hölder. In particular, we establish $\mathcal{C}^{1,\text{Log-Lip}}$-estimates. Our arguments rely on a geometric double blow-up argument. First, we approximate the original problem by a uniformly elliptic one. Then, we displace our assumptions to the recession profile of the latter. We discuss consequences of our main result to the regularity theory of important examples. Namely, the Monge-Ampère equation and the truncated Laplacian operators.

Keywords: Asymptotically elliptic operators; Regularity in Hölder spaces; Recession operator; Fully nonlinear equations.

MSC(2010): 35B65; 35J60; 35Q91.