

4.01.2021

Monday's Nonstandard Seminar 14

15:00

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Title: The self-improving property of higher integrability in the obstacle problem for the porous medium equation

Abstract: In this talk, we study the self-improving property of obstacle problems related to porous medium type equations. We restrict our attention to the case $m > 1$ of the so-called slow diffusion. In this case, the equation is degenerate in the sense that the modulus of ellipticity vanishes as $u \rightarrow 0$. We also cover the case of signed solutions. We then establish local higher integrability for the spatial gradient of a weak solution to our problem under integrability assumptions of the given obstacle function and the given inhomogeneities.

This talk is based on a joint work with Christoph Scheven (Universität Duisburg-Essen).