



LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

MATHEMATISCHES INSTITUT
PROF. THOMAS ØSTERGAARD SØRENSEN, PHD
VORLESUNGSANKÜNDIGUNG



SoSe15

Vorlesung (2 SWS ohne Übungen):

Viscosity solutions of nonlinear PDEs 2

Time and place: *Tuesday 16:15-18:00 in A 027.*

First meeting: *Tuesday April 14th 2015, 16:15 in A 027.*

Synopsis: This course is a continuation of my lecture *Viscosity Solutions for nonlinear PDEs* in the past semester. It treats the *regularity theory* of viscosity solutions for linear and nonlinear PDEs (whereas the first course treated the *definition, uniqueness* (Comparison Principles), and *existence* (Perron's Method) of viscosity solutions).

Topics to be discussed: Viscosity solutions, fully nonlinear elliptic PDEs, Alexandroff estimate and maximum principle (ABP estimate), Harnack inequality, $W^{2,p}$ -regularity, Hölder regularity, Gradient Hölder regularity.

Audience: Master students of Mathematics (WP 17.2, 18.1, 18.2) and Physics, TMP-Master.

Prerequisites: This course is a continuation from last semester. Students who wish to follow this course, but did *not* follow the course last semester, should (in due time!) contact me via email to discuss the prerequisites needed.

Language: The lecture will be in English.

Literature: L. A. Caffarelli, X. Cabré, *Fully Nonlinear Elliptic Equations*, AMS (1995).

Further information: <http://www.math.lmu.de/~sorensen>

Prof. Thomas Østergaard Sørensen, Ph.D.