COMPLEX MONGE-AMPÈRE EQUATION IN KÄHLER GEOMETRY

Prof. Zbigniew Błocki
Institute of Mathematics
Jagiellonian University
Krakow, Poland

We will concentrate on two cases when the complex Monge-Ampère equation is used in Kähler geometry: in Yau's proof of the Calabi conjecture (where one solves an inhomogeneous version of this equation on a compact manifold without boundary) and in the Donaldson problem of existence of geodesics in the Mabuchi space of Kähler metrics (which is equivalent to solving the homogeneous equation with prescribed boundary values). In the beginning, we will review basic concepts of Kähler geometry as well as the continuity method which reduces solving nonlinear elliptic equations of second order to a priori estimates.

Dates: 3rd, 4th, 6th, 9th, 11th and 13th of February, 2009
Time/Venue: 4:00–5:00 p.m. in LH-3, Department of Mathematics
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