

Přednášky od 5. 11. do 8. 11. 2018, zasedací místnost ÚMS (první patro u schodů), od 12:00 do 14:00

### **Gian Maria Dall'Ara (University of Vienna)**

An invitation to PDE methods in several complex variables

Abstract:

In these lectures I will present the point of view on complex analysis in several variables originated in the '60s from the seminal work of Hörmander and Kohn (among others) on the  $\bar{\partial}$ -problem and some of the most interesting applications. A tentative list of the topics I will discuss is:

- 1) one versus several complex variables: domains of holomorphy and failure of Riemann mapping theorem;
- 2) the problem of smooth extension to the boundary of biholomorphisms (Fefferman and Bell-Ligocka theorems);
- 3) existence and compactness in the  $\bar{\partial}$ -problem: a review of some ideas of Hörmander, Kohn and Catlin;
- 4) Kohn-Nirenberg regularity and recent work on necessary and sufficient conditions for compactness.

The lectures will be suited (and hopefully interesting) for master students and researchers alike.

