

Innolec lectures from **5.11.18 - 8.11.18**

The first lecture will take place on **Monday, 12:00-14:00, in the Seminar room on the 1st floor.**

**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.