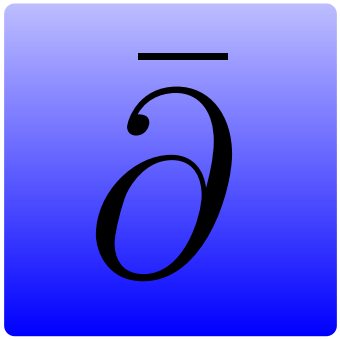

The biannual Brno-Wien meeting in Complex Analysis

Masaryk University

Brno

15.11.2010

11:00 Fritz Haslinger

Compactness for the $\overline{\partial}$ - Neumann problem

We characterize compactness of the $\overline{\partial}$-Neumann operator for a smoothly bounded pseudoconvex domain and in the setting of weighted L^2-spaces on $\mathbb{C}^n$ using a description of relatively compact subsets of L^2- spaces. In addition we discuss compactness of the $\overline{\partial}$-Neumann operator on $(0,q)$-forms. We point out obstructions to compactness and give some examples.

12:00 Laurent Stolovitch

Normal forms of analytic perturbations of quasihomogeneous vector fields

We study germs of holomorphic vector fields which are "higher order" perturbations of a quasihomogeneous vector field in a neighborhood of the origin of $\mathbb{C}^n$, fixed point of the vector fields. We define a "diophantine condition" on the quasihomogeneous initial part S which ensures that if such a perturbation of S is formally conjugate to S then it is also holomorphically conjugate to it. We study the normal form problem relatively to S. We give a condition on S that ensure that there always exists an holomorphic transformation to a normal form. If this condition is not satisfied, we also show, that under some reasonable assumptions, each perturbation of S admits a Gevrey formal normalizing transformation.

14:30 Martin Kolár

On finite type hypersurfaces with nonlinear symmetries

We will describe hypersurfaces of finite type in $\mathbb{C}^3$ which admit nonlinear symmetries, and discuss applications to the jet determination problem.

15:30 Vojtěch Žádník

On the curvature of homogeneous real hypersurfaces in $\mathbb{C}^2$

The talk will be focused on the Cartan's list of homogeneous real hypersurfaces in $\mathbb{C}^2$, in particular, on the fundamental associated invariant—the Cartan's curvature. We will recall its definition, seek for alternative techniques to approach it, and ask for a reasonable interpretation.