

Seminar & Events Bulletin: Several Complex Variables
01-01-2013 to 06-30-2013

Monday, January 14, 2013

4:00pm-5:00pm **Several Complex Variables** -- Tuyen Truong (Syracuse) *On automorphisms of blowups of projective manifolds* -- 3096 East Hall

Monday, February 04, 2013

4:00pm-5:00pm **Several Complex Variables** -- Elizabeth Wulcan (U Gothenburg/Chalmers) *Green functions and Segre numbers* -- 3096 East Hall

Monday, February 18, 2013

4:00pm-5:00pm **Several Complex Variables** -- Alexander Izzo (Bowling Green State / UM) *Generators for Algebras Dense in L^p spaces* -- 3096 East Hall

Monday, April 22, 2013

4:00pm-5:00pm **Several Complex Variables** -- Kenneth Koenig (Ohio State) *Maximal hypoellipticity for the $\overline{\partial}$ -Neumann problem* -- 3096 East Hall

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Abstracts

Several Complex Variables

Monday, January 14, 2013, 4:00pm-5:00pm

3096 East Hall

Tuyen Truong (Syracuse)

On automorphisms of blowups of projective manifolds

In the talk, I will give a heuristic argument to show that for a "generic" compact Kähler manifold of dimension at least 3, its automorphism group $\text{Aut}(X)$ has only finitely many connected components. In particular, any automorphism of X has topological entropy zero. Some general criteria will be introduced, and many explicit examples will be given in the case $X \dashrightarrow X_0$ is a finite composition of blowups along smooth centers. Here the projective manifold X_0 can be either of Picard number 1, or have anti-ample canonical divisor, or be a hyper-Kähler manifold. It seems from these examples that if X_0 has Picard number 1 and has dimension at least 3 and $X \dashrightarrow X_0$ is a finite blowup along smooth centers, then any automorphism of X has topological entropy zero.

Several Complex Variables

Monday, February 04, 2013, 4:00pm-5:00pm

3096 East Hall

Elizabeth Wulcan (U Gothenburg/Chalmers)

Green functions and Segre numbers

This talk is based on a joint work with Mats Andersson and Pascal Thomas. We give meaning to (higher) Monge-Ampère masses $(dd^c G)^k$ of Rashkovskii-Sigurdsson's Green function G with poles along an ideal sheaf I (also for k larger than the codimension of I). We show that the Lelong numbers of $1_Z (dd^c G)^k$, where Z is the variety of I , are the so-called Segre numbers of I . This result generalizes the well-known fact that if Z is a point, the top Monge-Ampère mass is just a point mass with mass equal to the Hilbert-Samuel multiplicity of I .

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Monday, February 18, 2013, 4:00pm-5:00pm

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Alexander Izzo (Bowling Green State / UM)

Generators for Algebras Dense in L^p spaces

For various L^p -spaces ($1 \leq p < \infty$) we investigate the minimum number of complex-valued functions needed to generate an algebra dense in the space. The results depend crucially on the regularity imposed on the generators. For μ a positive regular Borel measure on a compact metric space there always exists a single bounded measurable function that generates an algebra dense in $L^p(\mu)$. However, the situation is very different when the generators are required to be continuous or smooth. The most interesting case turns out to be that of continuous generators. This is joint work with Bo Li.

Several Complex Variables

Monday, April 22, 2013, 4:00pm-5:00pm

3096 East Hall

Kenneth Koenig (Ohio State)

Maximal hypoellipticity for the $\overline{\partial}$ -Neumann problem

We establish maximal hypoellipticity (in L^p -Sobolev and Lipschitz norms) for the $\overline{\partial}$ -Neumann problem on smooth, bounded pseudoconvex domains in \mathbb{C}^n under the weakest possible condition on the Levi form. In particular, maximal hypoellipticity holds on the level of $(n-1)$ -forms for all smooth, bounded pseudoconvex domains of finite commutator type. These results are new in dimensions $n \geq 3$.