

**International Conference on
Complex Analysis and Geometry**

May 19-23, 2014

Wuhan University, China

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Hua Chen (Wuhan Univ., China)

John Erik Fornaess (Univ. of Michigan, USA)

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Langfeng Zhu (Wuhan University)

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1. Program Schedule

Registration Date: May 19, 2014

Registration Places:

Fengyi Hotel（豐颐大酒店）：

Address: No.336 Bayi Road, Wuchang District, Wuhan

Telephone: 0086-27-67811888

武昌区八一路336号（武汉大学附中傍边）

Conference Venue:

School of Mathematics and Statistics, Wuhan University

International Conference on Complex Analysis and Geometry

May 19-23, 2014, Wuhan University, Wuhan, China

Overview of the Program Schedule

May 19, 2014 Monday		May 20, 2014 Tuesday	May 21, 2014 Wednesday	May 22, 2014 Thursday	May 23, 2014 Friday
	Chair	Hua Chen	Zhihua Chen	Caiheng Ouyang	Xiaojun Huang
Registration:	9:00-9:40	Opening Ceremony	Xiangyu Zhou	Dmitri Zaitsev	Howard Jacobowitz
	9:45-10:25	Nessim Sibony	Jeffery McNeal	Nordine Mir	Xianghong Gong
Time 9:00-18:00	10:25-10:45	Tea Break	Tea Break	Tea Break	Tea Break
	Chair	Hua Chen	Chunhui Qiu	Zehua Zhou	Xiaojun Huang
Venue Fengyi Hotel (豐頤大酒店)	10:45-11:25	David Barrett	Abdelhamid Meziani	Min Ru	Loredana Laznani
	11:30-12:10	Dan Coman	Shanyu Ji	Christine Laurent	Eric Bedford
	12:15-14:15	Lunch Break (Meiyuan Restaurant, 梅园酒店)	Lunch Break (Meiyuan Restaurant, 梅园酒店)	Lunch Break (Meiyuan Restaurant, 梅园酒店)	Lunch Break (Meiyuan Restaurant, 梅园酒店)
	Chair	Wei Wang	An Wang	Hao Liu	
	14:30-15:10	Siqi Fu	Gerado Mendoza	Ilya Kossovsky	
	15:15-15:55	Daowei Ma	Francine Meylan	Chong-Kyu Han	
	15:55-16:15	Tea Break	Tea Break	Tea Break	
	Chair	Zhenhan Tu	Maofa Wang	Wanke Yin	
	16:15-16:55	Yuan Zhang	Jiri Lebl	Yuan Yuan	
	17:00-17:40	Pak Tung Ho	Sheng Rao	Ming Xiao	
	18:00-19:30	Dinner (Fengyi Hotel)	Dinner (Fengyi Hotel)	Banquet (Luo-Jia Villa) (18:00-20:00)	Dinner (Fengyi Hotel)

Tuesday, May 20, 2014

- 8:30- *Professor Xiaojun Huang takes you from the hotel to the venue*
- Chairman *Hua Chen (Wuhan University, China)*
- 9:00-9:40 *Opening Ceremony and taking picture*
- 9:45-10:25 *Nessim Sibony (Universit\’e Paris-Sud (Orsay), France)*
Value Distribution Theory for Parabolic Riemann Surfaces
- 10:25-10:45 *Tea Break*
- Chairman *Hua Chen (Wuhan University, China)*
- 10:45-11:25 *David Barrett (University of Michigan, USA)*
Real hypersurfaces with constant Webster curvature
- 11:30-12:10 *Dan Coman (Syracuse University, USA)*
Geometric properties of upper level sets of Lelong numbers on projective spaces
- 12:15-14:15 *Lunch (Meiyuan Restraurant, 梅园酒店)*
- Chairman *Wei Wang (Zhejiang University, China)*
- 14:30-15:10 *Siqi Fu (Rutgers University-Camden, USA)*
The Diederich-Forn\ss exponent and non-existence of Stein domains with Levi-flat boundaries
- 15:15-15:55 *Daowei Ma (Wichita State University, USA)*
Pluripolar hulls and convergence sets on the projective space
- 15:55-16:15 *Tea Break*
- Chairman *Zhenhan Tu (Wuhan University, China)*
- 16:15-16:55 *Yuan Zhang (Indiana University-Purdue University, USA)*
CR transversality of holomorphic maps into hyperquadrics
- 17:00-17:40 *Pak Tung Ho (Sogang University, Korea)*
Results related to CR Yamabe problem
- 18:00-19:30 *Dinner (Fengyi Hotel, 豐頤大酒店)*

Wednesday, May 21, 2014

Chairman *Zhihua Chen (Tongji University, China)*

9:00-9:40 *Xiangyu Zhou (Chinese Academy of Sciences, China)*
Recent results on SL^2 extension and multiplier idea sheaf

9:45-10:25 *Jeffery McNeal (Ohio State University, USA)*
Regularity of twisted Bergman projections

10:25-10:45 *Tea Break*

Chairman *Chunhui Qiu (Xiamen University, China)*

10:45-11:25 *Abdelhamid Meziani (Florida International University, USA)*
Normalizatoin and solvability of vector fields near trapped orbits

11:30-12:10 *Shanyu Ji (University of Houston, USA)*
Rigidity for CR and Holomorphic Maps

12:15-14:15 *Lunch (Meiyuan Restraurant, 梅园酒店)*

Chairman *An Wang (Capital Normal University, China)*

14:30-15:10 *Gerado Mendoza (Temple University, USA)*
Complex w-manifolds

15:15-15:55 *Francine Meylan (Université de Fribourg, Switzerland)*
Holomorphic approximation in Banach spaces

15:55-16:15 *Tea Break*

Chairman *Maofa Wang (Wuhan University, China)*

16:15-16:55 *Jiri Lebl (Oklahoma State University, USA)*
*Normal forms for CR singular codimension two Levi-flat
Submanifolds*

17:00-17:40 *Sheng Rao (Wuhan University, China)*
Quasi-isometry and deformations of complex structures

18:00-19:30 *Dinner (Fengyi Hotel, 豐頤大酒店)*

Thursday, May 22, 2014

Chairman *Caiheng Ouyang (Wuhan Inst. Physics and Mathematics, China)*

9:00-9:40 *Dmitri Zaitsev (Trinity College, Ireland)*
Rigidity of CR maps between Shilov boundaries of bounded symmetric domains

9:45-10:25 *Nordine Mir (Texas A & M University at Qatar, Qatar)*
Artin approximation and CR Geometry

10:25-10:45 *Tea Break*

Chairman *Zehua Zhou (Tianjin University, China)*

10:45-11:25 *Min Ru (University of Houston, USA)*
Holomorphic curves into algebraic varieties intersecting numerically equivalent ample divisors

11:30-12:10 *Christine Laurent (Universit'e de Grenoble I, France)*
 S^L -theory and Serre duality for the tangential Cauchy-Riemann equation

12:15-14:15 *Lunch (Meiyuan Restaurant, 梅园酒店)*

Chairman *Hao Liu (Henan University, China)*

14:30-15:10 *Ilya Kossovsky (University of Vienna, Austria)*
On the analyticity conjecture of Ebenfelt and Huang

15:15-15:55 *Chong-Kyu Han (Seoul National University, Korea)*
Generalized Frobenius theorem and the Cartan- Kaehler theory

15:55-16:15 *Tea Break*

Chairman *Wanke Yin (Wuhan University, China)*

16:15-16:55 *Yuan Yuan (Syracuse University, USA)*
On holomorphic isometric embeddings

17:00-17:40 *Ming Xiao (Rutgers University, USA)*
Non-embeddability into a fixed sphere for a family of compact real algebraic hypersurfaces

18:00-20:00 *Banquet (Luo-Jia Villa, 武汉大学珞珈山庄)*

Friday, May 23, 2014

- Chairman** *Xiaojun Huang (Rutgers Univ., USA; Wuhan Univ., China)*
- 9:00-9:40** *Howard Jacobowitz (Rutgers University at Camden, USA)*
Existence of global CR structures
- 9:45-10:25** *Xianghong Gong (University of Wisconsin - Madison, USA)*
Real submanifolds of maximum complex tangent space at a CR singular point
- 10:25-10:45** *Tea Break*
- Chairman** *Xiaojun Huang (Rutgers Univ., USA; Wuhan Univ., China)*
- 10:45-11:25** *Loredana Laznani (University of Arkansas, USA)*
The Cauchy integral in \mathbb{C}^n
- 11:30-12:10** *Eric Bedford (Indiana University at Bloomington, USA)*
Continuity of Basins of Attraction
- 2:15-14:15** *Lunch (Meiyuan Restraurant, 梅园酒店)*
- 18:00-19:30** *Dinner (Fengyi Hotel, 豐頤大酒店)*

Abstracts

David Barrett (University of Michigan, USA)

Real hypersurfaces with constant Webster curvature

Abstract: This talk will begin with a review of the notion of Webster curvature for a real hypersurface in \mathbb{C}^n and the role that constant Webster curvature conditions play in variational problems. The balance of the talk will be devoted to the exploration of various families of hypersurfaces with constant Webster curvature.

Eric Bedford (Indiana University at Bloomington, USA)

Continuity of Basins of Attraction

Abstract: The first examples of Fatou-Bieberbach domains were basins of attraction for automorphisms of C^2 . Similarly, an automorphism with a semi-parabolic, semi-attracting fixed point has a basin which is a Fatou-Bieberbach domain. We will discuss semi-parabolic bifurcations of automorphisms of C^2 , and we will discuss the convergence of the attracting basins to the semi-attracting basin.

Dan Coman (Syracuse University, USA)

Geometric properties of upper level sets of Lelong numbers on projective spaces

Abstract: If T is a positive closed current on a complex manifold M and $\alpha \geq 0$, we consider the following upper level set of the Lelong numbers of T ,

$$E_\alpha^+(T) = \{z \in M : \nu(T, z) > \alpha\}.$$

We present joint results with Tuyen Trung Truong on geometric properties of this set in the case of projective spaces. For instance, if $M = \mathbb{P}^n$ and $\|T\|$ is the mass of T with respect to the Fubini-Study form, we have the following theorems:

Theorem 1. *If T is a positive closed current of bidimension (p, p) on \mathbb{P}^n , $0 < p < n$, with $\|T\| = 1$, then the set $E_{\alpha/(p+1)/(p+2)}^+(T, \mathbb{P}^n)$ is contained in a p -dimensional linear subspace of \mathbb{P}^n .*

Theorem 2. *If T is a positive closed current of bidimension (p, p) on \mathbb{P}^n , $0 < p < n$, with $\|T\| = 1$, then the set $E_{\alpha/(p+1)}^+(T, \mathbb{P}^n)$ is either contained in a p -dimensional linear subspace of \mathbb{P}^n or else it is a finite set and $|E_{\alpha/(p+1)}^+(T, \mathbb{P}^n) \setminus L| = p$ for some line L .*

Siqi Fu (Rutgers University-Camden, USA)

The Diederich-Fornæss exponent and non-existence of Stein domains with Levi-flat boundaries

Abstract: Diederich and Fornæss showed in 1977 that for any bounded pseudoconvex domain in \mathbb{C}^n with C^2 boundary, there exist a positive constant η and a defining function ρ such that $\hat{\rho} = -(-\rho)^\eta$ is plurisubharmonic. The Diederich-Fornæss exponent η has played an important role in regularity theory of the $\bar{\partial}$ -Neumann Laplacian. In this talk, we study the Diederich-Fornæss exponent and its relationship to non-existence of Stein domains with Levi-flat boundaries in complex manifolds. In particular, we show that if the Diederich-Fornæss exponent of a smooth bounded Stein domain in an n -dimensional complex manifold is $> k/n$, then it has a boundary point at which the Levi-form has rank $\geq k$. This talk is based on joint work with Mei-Chi Shaw.

Xianghong Gong (University of Wisconsin - Madison, USA)

Real submanifolds of maximum complex tangent space at a CR singular point

Abstract: We study real analytic n -dimensional submanifolds of C^n that have a complex tangent space of maximal dimension at a CR singularity. We study their holomorphic (resp. formal) classification under the action of local (resp. formal) biholomorphisms at the singularity. We transform them formally to suitable normal forms and show that the formal normal forms can all be divergent. If the singularity is abelian, we show, under some assumptions on eigenvalues, that the normal forms can be obtained by holomorphic transformations. We also show that if the real submanifold is formally equivalent to a quadric, it is actually holomorphically equivalent to the quadric if a small divisor condition is satisfied. Finally, we prove that, in general, there exists a complex submanifold in C^n that intersects the real submanifold along two totally and real analytic submanifolds that intersect transversally at a suitable CR singularity if n is 4 or larger. This is joint work with Laurent Stolovitch.

Chong-Kyu Han (Seoul National University, Korea)

Generalized Frobenius theorem and the Cartan- Kaehler theory

Abstract: We review and summarize the results in generalizations of the Frobenius theorem on involutivity and then compare them to the classical Cartan-Kaehler theory on the quasi-linear Pfaffian differential systems. As an immediate application we present a method of decomposition into orbits for control systems given by a set of smooth vector fields. In particular, we discuss how to decide the controllability of the system.

Pak Tung Ho (Sogang University, Korea)

Results related to CR Yamabe problem

Abstract: In this talk, I will talk about the CR Yamabe problem. I will mention the results about Yamabe flow, and the uniqueness of the CR Yamabe problem. If time permits, I will also talk about the CR analogue of Nirenberg's problem—the problem of prescribing Webster scalar curvature on the CR sphere.

Howard Jacobowitz (Rutgers University-Camden, USA)

Existence of global CR structures

Abstract: We show that the vanishing of the higher dimensional homology groups of a manifold ensures that every almost CR structure of codimension k may be homotoped to a CR structure. This result is proved by adapting a method due to Haefliger used to study foliations (and previously applied to study the relation between almost complex and complex structures on manifolds) to the case of (almost) CR structures on open manifolds.

Shanyu Ji (University of Houston, USA)

Rigidity for CR and Holomorphic Maps

Abstract: We consider CR embedding problems and Kahler manifolds with pseudo-conformal flat curvature tensors. Under certain conditions on co-dimension and curvature tensors, the image of some CR or holomorphic maps are proved to be totally geodesic.

Ilya Kossovsky (University of Vienna, Austria)

On the analyticity conjecture of Ebenfelt and Huang

Abstract: It is one of the central problems in CR-geometry to investigate regularity of CR-mappings between various classes of real submanifolds in complex space. For the class of real-analytic CR-submanifolds it is natural to expect the analyticity of CR-diffeomorphisms between them, i.e., holomorphic extension to an open neighborhood of the source manifold. In particular, if M, M' are two real-analytic hypersurfaces in two-dimensional complex space, then the analyticity is well-understood in the case when both M, M' are minimal, i.e., do not contain a germ of a complex hypersurface. It was a long-standing problem if one can omit the minimality condition. As in all known instances CR-diffeomorphism appeared to be analytic in the nonminimal case as well, it was conjectured by Ebenfelt and Huang (1999) that C^∞ CR-diffeomorphisms between real-analytic Levi nonflat hypersurfaces are analytic regardless of their minimality. In this joint work with Bernhard Lamel we provide a construction giving a counterexample to the conjecture of Ebenfelt and Huang. The construction is based on a remarkable connection between CR-geometry and local holomorphic dynamics, going back to the ideas of E. Cartan and B. Segre.

Loredana Lanzani (University of Arkansas, USA)

The Cauchy integral in \mathbb{C}^n

Abstract: This talk concerns recent joint work with E. M. Stein (Princeton U.) on the extension to higher dimension of Calderon’s and Coifman-McIntosh-Meyer’s seminal results about the Cauchy integral for a Lipschitz planar curve (interpreted as the boundary of a Lipschitz domain $D \subset \mathbb{C}$).

From the point of view of complex analysis, a fundamental feature of the 1-dimensional Cauchy kernel:

$$H(w, z) = \frac{1}{2\pi i} \frac{dw}{w - z}$$

is that it is holomorphic (that is, analytic) in D as a function of z . In great contrast with the one-dimensional theory, in higher dimension there is no obvious holomorphic analogue of $H(w, z)$. This is because of geometric obstructions (the Levi problem) that in dimension 1 are irrelevant.

A good candidate kernel for the higher dimensional setting was first identified by Jean Leray in the context of a C^∞ -smooth, convex domain: while the assumptions on the domain can be relaxed a bit, if the domain is less than C^2 -smooth (much less Lipschitz!) Leray’s construction becomes conceptually problematic.

In this talk I will present (a), the construction of the Cauchy-Leray kernel and (b), the $L^p(bD)$ -regularity of the induced singular integral operator under the weakest currently known assumptions on the domain’s regularity in the case of a planar domain these are akin to Lipschitz boundary. Time permitting, I will describe applications of this work to complex function theory (specifically, to the Szegő and Bergman projections).

Christine Laurent (Université de Grenoble I, France)

L^p -theory and Serre duality for the tangential Cauchy-Riemann equation

Abstract: We are interested in L^p -theory for the tangential Cauchy-Riemann operator in locally embeddable, s -concave, generic CR manifolds. We study the Dolbeault isomorphism and develop the Andreotti-Grauert theory in that setting. Using Serre duality, we solve the weak Cauchy problem in L^p .

Jiri Lebl (Oklahoma State University, USA)

Normal forms for CR singular codimension two Levi-flat submanifolds

Abstract: Joint work with Xianghong Gong. Real-analytic Levi-flat codimension two CR singular submanifolds are a natural generalization of Bishop surfaces to \mathbb{C}^m for $m \geq 3$. They also naturally appear as zero sets of mixed holomorphic functions. We have completely classified the quadric surfaces, and found an interesting feature. We mostly study the nondegenerate case, $z_m = \bar{z}_1 z_2 + \bar{z}_1^2$ and its higher perturbations. This surface has no analogue in dimension 2, while analogues of Bishop surfaces are in some sense degenerate in dimensions 3 and higher. We prove that the Levi-foliation extends through the singularity in the nondegenerate case. Furthermore, we proved that the quadric

is a (convergent) normal form for a natural large class of such submanifolds, and we computed its automorphism group. In general, we find a formal normal form in \mathbb{C}^3 in the nondegenerate case that shows infinitely many formal invariants.

Daowei Ma (Wichita State University, USA)

Pluripolar hulls and convergence sets on the projective space

Abstract: The talk is based on my recent joint work with Juan Chen. Let f be a formal power series of $n+1$ variables z_0, \dots, z_n . We say f is convergent if it converges absolutely in a neighborhood of the origin. Otherwise we say it diverges. The convergence set $Conv(f)$ of f is the set of $[z_0, \dots, z_n] \in \mathbb{C}P^n$ for which $f_z(t) := f(z_0t, \dots, z_nt)$ converges as a series of one variable t . A subset $E \subset \mathbb{C}P^n$ is said to be a convergence set if $E = Conv(f)$ for some divergent series f . For a compact set K in $\mathbb{C}P^n$, let K^* be its pluripolar hull. We prove that for each sequence $\{K_j\}$ of compact pluripolar sets in $\mathbb{C}P^n$, the set $\cup K_j^*$ is a convergence set.

Jeffery McNeal (Ohio State University, USA)

Regularity of twisted Bergman projections

Abstract: We will discuss how certain twisted-weighted Bergman projections are globally regular on a general smoothly bounded pseudo convex domains in \mathbb{C}^n . This result stands in contrast to the ordinary Bergman projection, which Christ showed is not globally regular on some smoothly bounded, pseudo convex domains.

The regularity result is proved by relating the Bergman-like projections to a twisted version of the $\bar{\partial}$ -Neumann problem. The twist and weight factors built into the twisted $\bar{\partial}$ -Neumann problem that allow regularity estimates to be established are domain dependent. We will discuss the role of the new feature of the regularity proof (the twist factor) in detail.

Gerardo Mendoza (Temple University, USA)

Complex w-manifolds

Abstract: A complex w-manifold M is a smooth manifold with fibered boundary together with an almost complex structure on the vector bundle associated with the space of smooth one-forms on M which over the boundary are conormal to the fibers. The almost complex structure is required to satisfy a condition ensuring that the base space of the boundary is a complex manifold in the usual sense, and the equivalent, in the w-category, of the formal integrability. The structure gives rise to a Dolbeault complex (singular over the boundary). The talk will present this framework in some detail, and analyze some aspects of the behavior of the complex near the boundary (where it becomes singular but exhibits interesting features). These manifolds generalize regular complex manifolds with

boundary as well as complex analytic varieties with a single singular stratum. This is a preliminary report on joint work in progress with T. Krainer.

Francine Meylan (Universit de Fribourg, Switzerland)

Holomorphic approximation in Banach spaces

Abstract: Given a complex Banach space X of infinite dimension, one can state the following Runge approximation problem:

Given $r \in (0, 1)$, $\epsilon > 0$, and f a holomorphic function on the open unit ball of X , is there an entire function h satisfying $|f - h| < \epsilon$ on the open ball of radius r centered at the origin?

In this talk, I will give a survey for this problem and state a conjecture that has been around since the work of L. Lempert in the late nineties.

Abdelhamid Meziani (Florida International University, USA)

Normalizatoin and solvability of vector fields near trapped orbits

Abstract: Abstract: We discuss the solvability and normalization, in the real analytic and smooth categories, of a class of vector fields in a neighborhood of an invariant torus. The vector fields are supposed to satisfy Siegel type conditions.

Nordine Mir (Texas A & M University at Qatar, Qatar)

Artin approximation and CR Geometry

Abstract: In 1968, Artin proved his famous approximation theorem : given any system of real-analytic equations, if there exists a formal solution to such a system at a given point, then there exists a real-analytic solution that is as close as we want in the Krull topology to the formal solution. One question that naturally thereafter arises is whether the conclusion of Artin's approximation theorem is still preserved if the system of equations is coupled with a specific PDE. In 1978, Milman investigated such a question when the PDE consists of the standard Cauchy-Riemann operator in $\mathbb{R}^{2n} \simeq \mathbb{C}^n$: he showed that any formal solution of a system of real-analytic equations and of the standard CR equations in \mathbb{C}^n can be approximated (in the Krull topology) by a sequence of convergent solutions of the system of analytic and CR equations. In this talk, we will discuss recent results generalizing Milman's theorem when the standard Cauchy-Riemann operator in \mathbb{C}^n is replaced by the tangential Cauchy-Riemann operator associated to a real-analytic CR manifold.

Sheng Rao (Wuhan University, China)

Quasi-isometry and deformations of complex structures

Abstract: We will mainly report my joint work with Kefeng Liu and Xiaokui Yang and several more recent applications of it. In that work, we prove several formulas related to

Hodge theory and the Kodaira-Spencer-Kuranishi deformation theory of complex structures. As applications, we present a construction of globally convergent power series of integrable Beltrami differentials on Calabi-Yau manifolds and also a construction of global canonical family of holomorphic $(n, 0)$ -forms on the deformation spaces of Calabi-Yau manifolds. Moreover, we will also discuss one more recent application to deformation invariance of Hodge numbers on Hermitian manifolds.

Min Ru (University of Houston, USA)

Holomorphic curves into algebraic varieties intersecting numerically equivalent ample divisors

Abstract: We extend the Second Main Theorem established by Min Ru (Ann. of Math (2). 2009) to holomorphic curves into algebraic varieties intersecting numerically equivalent ample divisors.

Nessim Sibony (Université Paris-Sud (Orsay), France)

Value Distribution Theory for Parabolic Riemann Surfaces

Abstract: Let Y be a parabolic Riemann surface, i.e. subharmonic functions defined on Y are constant. We discuss Nevanlinna's theory for holomorphic maps f from Y to the projective line. The results are parallel the classical case when Y is the complex line.

Let X be a manifold of general type, and let A be an ample line bundle on X . It is known that there exists a holomorphic jet differential P (of order k) with values in the dual of A . If the map f has infinite area and if Y has finite Euler characteristic, then we show that f satisfies the differential relation induced by P .

As a consequence, we obtain a generalization of Bloch Theorem concerning the Zariski closure of maps f with values in a complex torus.

We then study the degree of Nevanlinna's current $T[f]$ associated to a parabolic leaf of a foliation F by Riemann surfaces on a compact complex manifold. We show that the degree of $T[f]$ on the tangent bundle of the foliation is bounded from below in terms of the counting function of f with respect to the singularities of F , and the Euler characteristic of Y . In the case of complex surfaces of general type, we obtain a complete analogue of McQuillan's result: a parabolic curve of infinite area and finite Euler characteristic tangent to F is not Zariski dense.

This is joint work with Mihai Paun.

Ming Xiao (Rutgers University, USA)

Non-embeddability into a fixed sphere for a family of compact real algebraic hypersurfaces

Abstract: We discuss the holomorphic embedding problem from a compact strongly pseudoconvex real algebraic hypersurface into a sphere of higher dimension. We construct a family of compact strongly pseudoconvex hypersurfaces M_ϵ in \mathbb{C}^2 , and prove that for

any integer N , there is a number $\epsilon(N)$ with $0 < \epsilon(N) < 1$ such that for any ϵ with $0 < \epsilon < \epsilon(N)$, M_ϵ can not be locally holomorphically embedded into the unit sphere \mathbb{S}^{2N-1} in \mathbb{C}^N . It is a recent work joint with Xiaojun Huang, Xiaoshan Li.

Yuan Yuan (Syracuse University, USA)

On holomorphic isometric embeddings

Abstract: Local holomorphic isometries were systematically studied in 50's by Calabi and recently number theorists applied the local holomorphic maps between bounded symmetric domains to attack the problem in number theory, which also motivates our study of such problems. I will describe the result on the global extension and the rigidity for local holomorphic isometries between Hermitian symmetric spaces and explain the relation with CR geometry, minimal rational curves and etc. This is the joint work with Professor Xiaojun Huang.

Dmitri Zaitsev (Trinity College, IRELAND)

Rigidity of CR maps between Shilov boundaries of bounded symmetric domains

Abstract: Rigidity of CR maps between real hypersurfaces has attracted considerable attention, yet for the higher codimension CR manifolds only little is known.

In this joint work with S.Y.Kim we consider maps between Shilov boundaries of bounded symmetric domains of higher rank. The result states that any such CR embedding is the standard linear embedding up to CR automorphisms. Our basic assumption extends precisely the well-known optimal bound for the rank one case. There are no other restrictions on the ranks, in particular, the difficult case when the target rank is larger than the source rank is also allowed.

Yuan Zhang (Indiana University-Purdue University, USA)

CR transversality of holomorphic maps into hyperquadrics

Abstract: In this talk, we discuss CR transversality of holomorphic maps between CR hypersurfaces. Let M_ℓ be a smooth Levi-nondegenerate hypersurface of signature ℓ in \mathbb{C}^n with $n \geq 3$, and write H_ℓ^N for the standard hyperquadric of the same signature in \mathbb{C}^N with $N - n < \frac{n-1}{2}$. Let F be a holomorphic map sending M_ℓ into H_ℓ^N . Assume F does not send a neighborhood of M_ℓ in \mathbb{C}^n into H_ℓ^N . We show that F is necessarily CR transversal to M_ℓ at any point. This is a joint work with Xiaojun Huang.

Xiangyu Zhou (Chinese Academy of Sciences, China)

Recent results on L^2 extension and multiplier ideal sheaf

3. List of Participants

David Barrett, Department of Mathematics, University of Michigan, Ann Arbor,
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4. GENERAL INFORMATION

How to reach the hotel: When you reach the Airport of Wuhan, In the event that you don't meet anyone to meet you at the Wuhan airport, you can take a taxi to the hotel. It takes an hour to get to the hotel from the airport. The taxi fare should be about \$20 (US).

A Useful Chinese Phrases (show this to your taxi driver if needed in Wuhan):

请送我到**豐颐大酒店** (武昌区八一路336号 (武汉大学附中傍边) , 电话: 027-67811888), 要
发票. (Please drop me off at Fengyi Hotel, and give me a receipt of taxi fare)

Conference Venue: The conference will take place at School of Mathematics and Statistics, Wuhan University. It is about 20 minutes' walk from your Hotel to the Conference Venue.

Professor Xiaojun Huang will take you from the hotel to the venue at 8:30am, May 20 (the first day of the conference), 2014.

Network: Internet access is available at your hotel room.

Multi-media facilities: The lecture room in our conference is equipped with both white boards and data projector (using computer). It is also convenient to use a combination the white boards and data projector. But there is NO black board.

Dining: Breakfast 7:00~8:30 at Fengyi Hotel (Breakfast is included in the accommodation fee)

Lunch Dining Hall (Meiyuan Restraurant) at Wuhan University 12:15-14:15pm

Dinner Dining Hall (Fengyi Hotel) 18:00-19:30pm

Meal tickets are included in your briefcase provided by the conference.

Banquet: All participants are invited to the Banquet in Luo-Jia Villa, Wuhan University (武汉大学珞珈山庄) from 18:00 to 20:00, May 22, 2014. It is about 10 minutes' walk from the Conference Venue to Luo-Jia Villa. The banquet ticket is included in your briefcase provided by the conference.

Contact persons: Please take the following cell phone numbers with you, in case you need them in China:

13657277240 (cell phone number of Xiaojun Huang)

13419608899 (cell phone number of Zhenhan Tu)

13971248769 (cell phone number of Wanke Yin)