YOSHIHIRO AIHARA
Numazu College of Technology

Deficencies of holomorphic curves for hypersurfaces and linear systems

In this talk, I will give a construction of deficiencies of holomorphic curves in complex projective spaces. I also give a definition of deficiency for the base locus of linear system and some constructions.

ATSUSHI ATSUJI
Keio University

Diffusions and Nevanlinna theory

We give a simple setting of Nevanlinna theory of meromorphic functions by using some diffusion processes on Kahler manifolds. We discuss estimates on the bounds of number of omitted values under our setting.

ROBERT BERMAN
Universite Grenoble I

From volumes of line bundles to equidistribution

Let L be a big line bundle over a compact complex manifold X. In this talk I will discuss a notion of " metric volume" of an Hermitian line bundle (L,h), which generalizes the well-known "algebraic volume" of L and which is closely related to "arithmetic volumes". The study of its variational properties w.r.t. the metric h, leads to various applications, notably concerning equidistribution of points (and more generally measures) on X, e.g. equidistribution of (1) points of small height when X is an arithmetic variety, (2) Fekete points in arbitrary dimensions and (3) very general Bergman kernel measures. The talk is based on joint work with S. Boucksom and D. Witt-Nystrm.

THOMAS BLOOM
Toronto

Large Deviations for VanDerMonde determinants

I will give a different proof of a large deviation estimate involving VanDerMonde determinants due to Johannson. I will also give a multivariable version of that estimate. The proofs involve potential theory and pluripotential theory.

FREDERIC CAMPANA
University Nancy 1

Special Orbifolds and Birational Classification: Hyperbolic and Arithmetic Aspects

Lang's Conjectures assert that projective varieties of general type are the ones which are either generically hyperbolic or "mordellic". We introduce a new class: the "special" varieties, which are the ones not mapping onto a "geometric orbifold" of general type. Conjecturally these are exactly the varieties with vanishing Kobayashi pseudometric, and potentially dense set of rational points. A new canonical fibration ("the core") is constructed, on any projective variety, with fibres special and "orbifold base" of general type. Conjecturally the core permits to describe in algebro-geometric terms the Kobayashi pseudometric and the (potential) distribution of rational points.

WILLIAM CHERRY
University of North Texas

Algebraic degeneracy of non-Archimedean analytic maps omitting divisors with sufficiently many components

I will discuss joint work with Ta Thi Hoai An and Julie Tzu-Yueh Wang on algebraic degeneracy of non-Archimedean analytic maps omitting a divisor with sufficiently many components relative to the rank of the Neron-Severi group of the target. This is a non-Archimedean analogue of a theorem of Noguchi and Winkelmann for complex holomorphic curves. I will make some connections to conjectures of Aaron Levin.

GERD DETHLOFF
Université de Brest

A Second Main Theorem for Moving Hypersurface Targets

We prove a truncated Second Main Theorem for algebraically non-degenerate meromorphic maps from C^m to CP^n for slowly moving hypersurface targets in weakly general position.

JULIEN DUVAL
Universite Paris-Sud

On Nevanlinna second main theorem

After Yamanoi, we show how to deduce Nevanlinna second main theorem for slowly moving targets from Ahlfors theory of covering surfaces.

ALEX EREMENKO
Purdue University

Landau's theorem for holomorphic curves in projective space

The talk is based on a recent work of A. Eremenko and W. Cherry. Let f be a holomorphic map from the unit disc to P^n omitting $2n+1$ hyperplanes. Then $|f'(0)|$ is bounded from above by a constant that depends only on the omitted hyperplanes. All previous proofs of this result were non-effective: the existence of the bound was derived from compactness arguments. We give an explicit bound for $|f'(0)|$.

VINCENT GUEDJ
Aix-Marseille University

Monge-Ampere equations in big cohomology classes

A celebrated theorem of Yau asserts that a Kaehler class alpha always contains Kaehler forms with prescribed Ricci curvature. We establish a similar result when the class alpha is merely big. As a consequence we obtain the existence of a singular Kaehler-Einstein metric on any manifold of general type, without assuming the existence of a canonical model. This is a joint work with S.Boucksom, P.Eyssidieux and A.Zeriahi.

SHANYU JI
Houston

Application of the Moving Frame Theory to Holomorphic Mappings between Balls

We start to review Cartan's moving frame theory for real submanifolds in Euclidean space, for complex submanifolds in the Complex Projective space, and in particular for CR submanifolds in the Heisenberg Space. Then we use this theory to study holomorphic proper mappings between balls. In particular, the gap phenomenon problem

YU KAWAKAMI
Kyushu university

Value distribution of the hyperbolic Gauss map

In this talk, I will explain my recent work on value distribution of the Gauss map of surfaces. In particular, I will give the ramification estimates for the hyperbolic Gauss map of pseudo-algebraic and algebraic Bryant surfaces.

STEVEN LU
UQAM

Algebraic hyperbolicity for varieties with maximal albanese dimension

We will look at the detailed algebraic structures of varieties of general type as predicted by Serge Lang and prove an effective version in the case of maximal albanese dimension.

NGAIMING MOK
Hong Kong

Holomorphic isometries with respect to the Bergman metric

Motivated by a problem from Arithmetic Geometry raised by Clozel-Ullmo, we study the question of characterizing germs of holomorphic isometric immersions between bounded domains with respect to the Bergman metric. Extension and rigidity problems for holomorphic isometries into possibly infinite-dimensional space forms dated back to works of Bochner and Calabi. For a bounded domain $D \Subset \mathbb{C}^n$ equipped with the Bergman kernel $K_D(z,w)$, the function $\log K_D(z,z)$ serves as a potential function for the Bergman metric ds^2_D, and the choice of an orthonormal basis for the Hilbert space $H^2(D)$ of square-integrable holomorphic functions defines a holomorphic isometric embedding of (D, ds^2_D) into the infinite-dimensional projective space $\mathbb{P}^\infty$ equipped with the Fubini-Study metric. In the simply connected case interior extension results already follow from Calabi's seminal work in 1953 on the subject. Here we are primarily concerned with extension beyond the boundary for bounded domains with specific realizations,notably bounded symmetric domains in their Harish-Chandra realizations. The upshot is that the graph of a germ of holomorphic isometry extends algebraically in the latter case. On the other hand, we have found examples of proper holomorphic isometric embeddings of the Poincaré disk into bounded symmetric domains which are not totally geodesic, giving in particular counter-examples to a conjecture of Clozel-Ullmo's.

JUNJIRO NOGUCHI
Tokyo

Some Second Main Theorems and applications

I first show a formal S.M.T. only in terms of differentiable hermitian connection. It provides a good geometric understanding of H. Cartan's method, but not more very much so far now, unfortunately. The relations with the works of Chern-Cowen-Vitter and Siu will be mentioned. I will also discuss the S.M.T. for holomorphic curves into semi-abelian varieties and its applications.

NESSIM SIBONY
Universite Paris-Sud

Super-Potentials on Compact Kahler Manifolds and dynamics of Automorphisms

We introduce a notion of super-potential (canonical function) associated to positive closed (p,p)-currents on compact Kähler manifolds and we develop a calculus on such currents. One of the key points in our study is the use of deformations in the space of currents. As an application, we obtain several results on the dynamics of holomorphic automorphisms: regularity and uniqueness of the Green currents. We get equidistribution results for subvarieties with respect to automorphisms.We also obtain the hyperbolicty of the equilibrium measures and compute their entropy. This is joint work with T.C Dinh.

YUM-TONG SIU
Harvard University

Hyperbolicity of generic hypersurfaces of high degree

YURI TSCHINKEL
Courant Institute of Mathematical Sciences

A Torelli theorem over finite fields

I will explain a version of the Torelli theorem for curves over finite fields.

HAJIME TSUJI
Sophia University

Global generation of the direct images of pluricanonical systems

n this talk I will explain my recent work which proves that for any algebraic fiber space the direct image of relative m-ple (log) canoincal system is globally generated outside of the discriminant locus for every sufficiently large and divisible m. This generalizes Arakelov's theorem in the case of family of curves.

MASAKI TSUKAMOTO
Kyoto University

Deformation of Brody curves and mean dimension

We develop the deformation theory of Brody curves. Brody curve is a kind of holomorphic map from the complex plane to the projective space. Since the complex plane is not compact, the parameter space of the deformation can be infinite dimensional. As an application we show a lower bound on the mean dimension of the space of Brody curves.

JULIE WANG
Academia Sinica

An effective Schmidt's subspace theorem for projective varieties over function fields

The talk is based on a recent joint work with Min Ru. We deduce an effective version of Schmidt's subspace theorem on a projective variety X over function fields of characteristic zero for divisors of X coming from hypersurfaces in the embedded projective spaces.

JORG WINKELMANN
Fakultät Mathematik

Entire curves in surfaces with large irregularity

We discuss the problem to characterize those (not necessarily compact) algebraic surface of logarithmic irregularity two (or larger) which do admit a non-degenerate entire curve, i.e., a non-constant holomorphic map from the complex line whose image is Zariski dense in the surface. We obtain new results employing new results in Nevanlinna theory for entire curves in semi-abelian varieties.

STEVE ZELDITCH
Johns Hopkins

How probable is a given configuration of zeros?

My talk is about zeros of random holomorphic sections of powers of ample line bundles over Riemann surfaces M. The zero set of a holomorphic section of a degree N line bundle is a configuration of N points on M. If the projective space of sections is equipped with a (Fubini-Study) probability measure, then it induces a probability measure on the Nth symmetric product of M called the joint probability current of zeros. Our main result is to determine the asymptotics of this current in the sense of large deviations theory. This is partly joint work with O. Zeitouni and B. Shiffman.