2022 SWCGA – Program

Time Table

in KST UTC −12 UTC −11 UTC −10 UTC −9 UTC −8 UTC −7 UTC −6 UTC −5 UTC −4 UTC −3 UTC −2 UTC −1 UTC +0 UTC +1 UTC +2 UTC +3 UTC +4 UTC +5 UTC +6 UTC +7 UTC +8 UTC +9 (KST) UTC +10 UTC +11 UTC +12

|Feb. 17(Thu)|Feb. 18(Fri)|

|15:00 – 15:50 | Ngoc Cuong Nguyen | Lucas Kaufmann | |16:00 – 16:50 | Zheng Yuan | Hoseob Seo (16:00 – 16:30) | |17:00 – 17:50 | Xiaojun Wu | Xu Wang | |18:00 – 18:50 | | Alexander Rashkovskii |

(Download as PDF)

Abstracts

Lucas Kaufmann (IBS, Korea)

Title : Monge−Amp□re operators via intersection theory of currents

Abstract : Given a p.s.h. function u, it is important in many situations to give a reasonable meaning to the Monge−Amp□re operator $MA(u)$. Several definitions of such operators exist and they all coincide for "nice" u.

In this talk I aim to revisit this problem from the point of view of the intersection theory of currents. I will recall recent notions of intersection and their relations with various definitions of the Monge−Amp□re operator. This is based on joint works with D.−T. Huynh (Chinese Academy of Sciences) and D.−V. Vu (Cologne).

Ngoc Cuong Nguyen (KAIST, Korea)

Title : The Dirichlet problem for the Monge−Amp□re equation on Hermitian manifolds with boundary

Abstract : This is joint work with S ł awomir Ko ł odziej. We study weak quasi−plurisubharmonic solutions to the Dirichlet problem for the complex Monge−Amp□re equation on a general Hermitian manifold with non−empty boundary.

We prove optimal subsolution theorems: for bounded and Hölder continuous quasi-plurisubharmonic functions. The continuity of the solution is proved for measures that well dominated by capacity, for example measures with $L^p, p > 1$ densities, or moderate measures in the sense of Dinh-Nguyen-Sibony.

Alexander Rashkovskii (University of Stavanger, Norway)

Title : Residual plurisubharmonic functions

Abstract : For any negative psh function on a bounded domain of $\mathbf{C}^n$, we construct a psh function determined by the asymptotical behavior of the given function near its singularity points, both inside the domain and on its boundary. We study properties of such residual functions and their relations to asymptotic psh rooftops. a_b

The considerations are motivated by a problem on when two given psh functions can be connected by a psh geodesic.

Hoseob Seo (Seoul National University, Korea)

Title : On equisingular approximation of plurisubharmonic functions

Abstract : After Demailly-Peternell-Schneider's equisingular approximation, it is a natural question to ask which plurisubharmonic functions admit a 'nice' approximation in the sense of a decreasing equisingular approximation with analytic singularities. In this talk, we give a criterion for admitting a nice approximation with toric approximants for toric plurisubharmonic functions. Our results are motivated by a recent result of Guan for toric plurisubharmonic functions of the diagonal type. This is joint work with Jongbong An.

Xu Wang (NTNU, Norway)

Title : A remark to Berndtsson's approach for strong openness

Abstract : I will discuss the recent Hörmander approach for strong openness theorem based on the work of Guan-Zhou.

Then I will show how to use the complex Brunn-Minkowski theory of Berndtsson to give a direct proof of Guan's sharp version of the strong openness theorem.

Xiaojun Wu (University of Bayreuth, Germany)

Title : Pseudo-effective vector bundle and numerical flatness

Abstract : In this talk, I will discuss the generalisation of the notion of pseudo-effective line bundle to the higher rank case. In particular, I will talk about the proof of the following result: a strongly pseudo-effective vector bundle over a compact Kähler manifold with vanishing first Chern class is numerically trivial. The proof is based on a natural construction of closed positive current in the

first Chern class called Segre current. The projective case of this result has been proven by Campana–Cao–Matsumura and Hosono–Iwai–Matsumura. As a geometric application, the tangent bundle or cotangent bundle of a Calabi–Yau manifold or a symplectic irreducible holomorphic manifold is not strongly pseudo–effective. If times permits, I will talk about some more recent work.

Zheng Yuan (Peking University, China)

Title：Concavity property of minimal L^2 integrals and its applications

Abstract：In this talk, we recall the concavity property of minimal L^2 integrals related to multiplier ideal sheaves. As applications, we recall a characterization for the holding of the equality in optimal jets L^2 extension problem on open Riemann surfaces, e□ectiveness of strong openness property in L^p, an optimal uniform support function related to the strong openness property and a twisted version of strong openness property in L^p. This talk is based on joint works with Qi'an Guan and a joint work with Qi'an Guan and Zhitong Mi.

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