

Workshop on Harmonic Analysis and Several Complex Variables

Time: 09:00 to 17:00 on 13 June 2016

Venue/Location: C2-714, VIASM, The 7th floor, Ta Quang Buu Library, University of Science and Technology, 1 Dai Co Viet Street, Ha Noi, Viet Nam.

Organisers: Nguyen Huu Du (Vietnam Institute for Advanced Study in Mathematics, VN), Pham Hoang Hiep (Institute of Mathematics-Vietnam Academy of Science and Technology Mathematics, VN), Tran Vu Khanh (University of Wollongong, Australia).

Purpose: The aim of this workshop is to bring together both active senior researchers and young mathematicians with interest in Harmonic Analysis and Several Complex Variables and to foster exchange of ideas and interaction between these fields.

Invited Speakers: Andrew Raich (University of Arkansas, USA), Duong Xuan Thinh (Macquarie University, Australia), Luong Dang Ky (Quy Nhon University, VN); Ngo Quoc Anh (Hanoi University of Sciences, VN); Nguyen Thac Dung (Hanoi University of Sciences, VN); Si Duc Quang (Hanoi National University of Education, VN).

Content: Workshop presents some recent results in Harmonic Analysis and Several Complex Variables

Program:

| Morning | |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00-9:05 | Opening the workshop |
| 9:05-10:00 | <p>Andrew Raich (University of Arkansas, USA) <i>Title:</i> Global L^q-Gevrey Function Spaces</p> <p><i>Abstract:</i> In this talk, I will discuss ongoing joint work with Gustavo Hoepfner. I will introduce a class of functions that arose in the work of Boggess and myself when estimating the \square_b-heat kernel on polynomial models. This class of functions captures the quantitative estimates on the Fourier transform needed to characterize exponential decay. I will discuss properties of these functions, give examples, and explore other applications.</p> |
| 10:05-11:00 | <p>Sy Duc Quang (Hanoi National University of Education, Vietnam) <i>Title:</i> On the second main theorem in Nevanlinna theory</p> <p><i>Abstract:</i> In this talk, we discuss on the second main theorem for meromorphic mappings into projective varieties intersecting hypersurfaces. We also present some applications of Nevanlinna theory to the extension and normal family problem of meromorphic mappings.</p> |
| 11:05-12:00 | <p>Nguyen Thac Dung (Vietnam National University - Hanoi, Vietnam) <i>Title:</i> The first eigenvalue of the weighted p-Laplacian and rigidity of complete manifolds</p> <p><i>Abstract:</i> Given a Riemannian manifold (M^n, g) with $Ric_M \geq -(n-1)$, Li and Wang proved in their seminal paper [<i>Jour. Diff. Geom.</i>, 58 (2001), 501–534] that when the first eigenvalue $\lambda_1(M)$ of the Laplacian is obtained its optimal value then M is connected at infinity; or M is isometric to $N \times \mathbb{R}$ for some compact manifold N with warped metric product. Li-Wang’s theorem has been extended in several ways. In this talk, I will recall some results regarding to rigidity properties of Kähler or quaternionic Kähler manifolds under assumption on maximality of the first eigenvalue $\lambda_1(M)$. Then I will show some structure theorems of Kähler, quaternionic Kähler manifolds and smooth metric measure spaces via theory of weighted p-harmonic functions.</p> |

| Afternoon | |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:00-2:55 | <p>Duong Xuan Thinh (Macquarie University, Australia) <i>Title:</i> Function spaces associated to operators with applications to Hardy spaces and BMO spaces in the Bessel setting</p> <p><i>Abstract:</i> We explain function spaces associated to operators and prove a weak factorization of the Hardy space H^1 on $(0, \infty)$ with measure $dm_\lambda = x^{2\lambda}d\lambda$ by using a bilinear form of the Riesz transform associated to the Bessel operator Δ_λ.</p> |
| 3:00-3:55 | <p>Luong Dang Ky (Quy Nhon University, Vietnam) <i>Title:</i> On the duality H^1-BMO and new Hardy spaces</p> <p><i>Abstract:</i> In this talk, we will present some recent results about the duality H^1-BMO and new Hardy spaces of Musielak-Orlicz type.</p> |
| 4:00-4:55 | <p>Ngo Quoc Anh (Vietnam National University - Hanoi, Vietnam) <i>Title:</i> Solutions to Toda systems on the plane via rational curves in $\mathbb{C}P^N$</p> <p><i>Abstract:</i> The history of the underlying problem traces back to 1853, when J. Liouville characterized all real solutions of $-\Delta u = Ke^u$ on a simply-connected domain in \mathbb{R}^2 via locally univalent meromorphic functions. A very natural generalization of the Liouville equation is the Toda system equipped with a Cartan matrix, which has its root in the study of non-abelian Chern-Simons vortices in Gauge field theory. In this talk, I will discuss a beautiful classification result by J. Jost and G. Wang for solutions of the Toda system whose Cartan matrix is of type A. Of other important types such as B, C, D will also be discussed when time permits.</p> |
| 4:55-5:00 | Closing the workshop |