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## WORKSHOP BỘ MÔN GIẢI TÍCH

(Thứ 3, 27/12/2016, Room : F207)

**Bộ môn giải tích trân trọng thông báo đến quý thầy cô, học viên cao học, sinh viên workshop của bộ môn về chuyên đề : Giải Tích Điều Hòa và Phương Trình Đạo Hàm Riêng như sau :**

- 1. Prof. Nguyễn Công Phúc ( Louisiana State University, USA)  
(9h00-9h50)**

Title : Sobolev capacities in nonlinear partial differential equations.

Abstract : Sobolev spaces are spaces of functions whose (weak) derivatives have certain degree of integrability. Associated to each Sobolev space is a Sobolev capacity. Originally appearing in the theory of electrostatics, Sobolev capacities have played an important role in modern analysis as a device to measure smoothness or singularity. In this lecture, I will discuss their connection to the so-called trace inequalities and their applications to certain nonlinear elliptic partial differential equations with super-critical nonlinearities as well as the stationary Navier-Stokes system. The talk is based on joint work with Igor E. Verbitsky and Tuoc Van Phan.

2. **Prof. Nguyễn Công Phúc ( Louisiana State University, USA)**  
**(10h10-11h00)**

Title : Local energy bounds and  $\varepsilon$ -regularity criteria for the 3D Navier-Stokes system

Abstract : : In this lecture, the system of three dimensional Navier-Stokes equations is considered. We obtain some new local energy bounds that enable us to improve several  $\varepsilon$ -regularity criteria. The key idea here is to view the head pressure as a sign distribution belonging to certain fractional Sobolev space of negative order. A certain connection between this lecture and the first one will be explained. The talk is based on joint work with Cristi Guevara.

3. **Dr Lý Kim Hà (University of Science, HCMUS)**  
**(11h10-11h40)**

Title : On the Lipschitz continuity of Begmann projections in  $C^n$

Abstract : The global Lipschitz continuity of Begmann projections in a class of smoothly bounded, convex domains in  $C^n$  is the main purpose of this talk.

4. **Dr Lê Minh Tuấn (Saigon University)**  
**(13h30-14h20)**

Title : Nhóm tái chuẩn hóa và giới hạn nhiệt động lực học của các hàm tương quan trong khí lưỡng cực.

Abstract : Chúng tôi giới thiệu tóm tắt và thảo luận về nội dung của các bài báo :

1. Bài giảng của D. Brydges: <http://www.math.ubc.ca/~db5d/Seminars/PCMILectures/lectures.pdf>

2. Bài báo của J. Dimock: <http://link.springer.com/article/10.1007/s10955-009-9739-8>

3. Bài báo của L. M. Tuan. <http://link.springer.com/article/10.1007/s00023-016-0495-4>

5. **Dr. Võ Hoàng Hưng (University of Science, HCMUS)**  
**(14h30-15h10)**

Title : The eigenvalue of p-Laplacian operator and an application

Abstract : We study the eigenvalue of p-Laplacian operator of the form

$$K_V[\phi] := -\Delta_p \phi + V\phi^{p-1}, \quad \phi \geq 0$$

in  $\mathbb{R}^N$  and use this notion to study the existence/nonexistence of positive solution to the quasilinear elliptic equation

$$-\Delta_p u + (\beta\Phi(x) - a(x))u^{p-1} + b(x)g(u) = 0 \quad x \in \mathbb{R}^N.$$

The uniqueness and some asymptotic behavior as  $\beta \rightarrow 0$  and  $\beta \rightarrow \beta^*$  are also derived.