

De: Centre de recherches mathématiques crm@crm.umontreal.ca

Objet: ****AUJOURD'HUI**** - CONFÉRENCE NIRENBERG DU CRM EN ANALYSE GÉOMÉTRIQUE - Eugenia Malinnikova (NTNU)

Date: 16 mars 2018 09:53

À: Activités CRM activites@crm.umontreal.ca



CONFÉRENCE NIRENBERG DU CRM EN ANALYSE GÉOMÉTRIQUE
CRM NIRENBERG LECTURE IN GEOMETRIC ANALYSIS

16 mars 2018 / March 16, 2018
16h00 / 4:00 pm

Eugenia Malinnikova (Norwegian University of Science and Technology)

50e ANNIVERSAIRE DU CRM / CRM 50th ANNIVERSARY
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Centre de recherches mathématiques
Pavillon André-Aisenstadt, Université de Montréal
Salle / Room 6254

"Remez inequality, unique continuation and propagation of smallness for second order elliptic PDEs"

(Cette conférence s'adresse à un large auditoire. / This lecture is aimed at a general mathematical audience.)

The celebrated Remez inequality for polynomials states that the maximum of the polynomial over an interval is controlled by its maximum over a subset of positive measure of the interval. The coefficient in the inequality depends on the degree of the polynomial, and the equality is attained by Chebyshev polynomials. In my recent joint work with A. Logunov, we obtained a generalization of the Remez inequality to the solutions of general second order elliptic PDEs and their gradients. In this context, the degree of a polynomial is replaced by the Almgren frequency of the solution which we investigate using geometric methods. In the talk, I will present this result and its connections to other important features of the solutions of elliptic PDEs, such as quantitative unique continuation and propagation of smallness. In particular, our approach yields an answer to an old question of Landis and improves upon earlier results of Nadirashvili and Vesella.

Une réception suivra la conférence au salon Maurice L'Abbé, Pavillon André-Aisenstadt (salle 6245).

A reception will follow the lecture at the Salon Maurice-L'Abbé, Pavillon André-Aisenstadt (room 6245).

Eugenia Malinnikova est professeure à l'Université norvégienne de sciences et de technologie à Trondheim. Ses contributions incluent des travaux novateurs réalisés conjointement avec A. Logunov sur la géométrie nodale des fonctions propres du laplacien, qui ont mené à la preuve de deux conjectures importantes de ce domaine mathématique dues à Shing-Tung Yau et Nikolai Nadirashvili. Les réalisations scientifiques de Eugenia Malinnikova ont mené à l'obtention d'un Clay Research Award en 2017 et à une invitation comme conférencière à l'ICM 2018 de Rio de Janeiro.

Faculty at the Norwegian University of Science and Technology in Trondheim, Eugenia Malinnikova's contributions include a groundbreaking joint work with A. Logunov on the nodal geometry of Laplace eigenfunctions, that has led to a proof of two major conjectures in the field due to Shing-Tung Yau and Nikolai Nadirashvili. The research achievements of Eugenia Malinnikova have been recognized by the 2017 Clay Research Award and an invitation to speak at the 2018 ICM in Rio de Janeiro.

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