

# Séminaire d'analyse



Vendredi 11 septembre 2015

14h

Local VCH 2810

## Conférencier

**Christian Enache** (IMAR Roumanie)

## Titre

**Maximum principles and some applications to surfaces of constant Gauss curvature**

## **Résumé**

In this talk we are mainly dealing with a general class of Monge-Ampère equations, including the constant Gauss curvature equation. Our first aim is to prove some maximum and minimum principles for suitable P-functions, in the sense of L.E. Payne. Then, these new principles are employed to solve a general class of overdetermined Monge-Ampère problems and to investigate two boundary value problems for the constant Gauss curvature equation. More precisely, when the constant Gauss curvature equation is subject to the homogeneous Dirichlet boundary condition, we prove several isoperimetric inequalities, while when it is subject to the contact angle boundary condition, some necessary conditions of solvability, involving the curvature of the boundary of the underlying domain and the given contact angle, are derived.

## **References**

- [1] C. Enache, Maximum and minimum principles for a class of Monge-Ampère equations in the plane, with applications to surfaces of constant Gauss curvature, *Communications on Pure and Applied Analysis*, 13(3) (2014), 1347-1359.
- [2] C. Enache, Maximum principles and isoperimetric inequalities for some Monge-Ampère type problems, *Comptes Rendus de l'Académie des Sciences Paris Series I - Mathematics* 352 (2014), 37-42.