



# Séminaire des étudiants en mathématiques

CONFÉRENCIER: MASOUMEH SAJEDI

TITRE: **Integrable systems and the Liouville theorem**

DATE: VENDREDI 17 JANVIER 2014

HEURE: 12H30

SALLE: 5340

## RÉSUMÉ:

I will give a brief talk on integrable systems and the Liouville theorem. We have a  $2n$ -dimensional symplectic manifold  $(M, \omega)$  and a Hamiltonian  $H : M \rightarrow \mathbb{R}$ . We are interested in the integral curves of the Hamiltonian vector field, (which we should think of as the trajectories of our system). If we can find  $n$  independent integrals which Poisson commute with each other, our system is called fully integrable, or integrable in the sense of Liouville. It says that one can find local coordinates in which the system looks just like a linear flow on a torus.