

Jean-Morlet Chair - Conference
Arithmetic Statistics - Statistiques arithmétiques

Guillermo MANTILLA SOLER, Universidad Nacional de Colombia-Medellín

Title: *On zeta functions of number fields and related arithmetic invariants*

Abstract: Dedekind zeta functions lead to the notion of arithmetically equivalent number fields. This subject has been first seriously studied since the 70's by R. Perlis and collaborators, and they have proved several classic results about the characterization of such functions. We will explain how, via some basic interpretations of Galois representations, we can recover most of the classic results and in fact give improvements to some of them. Moreover, from the Galois representation point of view we will see how to connect zeta functions to other arithmetic invariants of number fields, and how they are under certain ramification restrictions complete invariants. If time permits, we will mention how this is related to some of Bhargava's parametrization of cubic and quartic number fields.