The Department of Mathematics presents

A Mathematics Colloquium

Monday, January 11, 2016, 4:00–4:50pm

Speaker: Mehdi Garrousian (Universidad de los Andes)
Title: The Fitting module of a linear code

Abstract: Coding theory is an interdisciplinary area whose goal is to study the properties of various types of codes and design methods of error detection and error correction. In the first part of this talk, we give a quick introduction to linear codes and define the concept of Hamming distance and show how it can be used to perform error correction. In the second part, we introduce a few concepts from commutative algebra such as Hilbert series and Fitting modules. Then, we show that one can naturally assign a Fitting module to a linear code and recover the minimum distance from the homological data of the module. This talk is for the most part self contained and will be accessible to most students of mathematics, computer science and engineering.

Refreshments provided by Prof. Berget