

**10º Encuentro Regional de Probabilidad y
Estadística Matemática (ERPEM 2014)
High dimensional phenomena in Probability,
Statistics and Signal Processing**

Special Introductory Course

Title:

Randomness, Matrices and High Dimensional Problems

Speaker:

Afonso Bandeira (PRINCETON) and
Roberto I. Oliveira (IMPA)

Classes:

Auditorium R. Mañé
3/11 and 5/11 - 1:30PM - 5:00PM
6/11 and 7/11 - 10:00AM - 12:00AM

Abstract:

This course provides a very short and partial introduction to high dimensional problems in Probability, with applications in Statistics and Compressed Sensing. Our focus will be on problems involving random covariance-type matrices and random matrices with independent entries. Besides proving concentration properties for these matrices, we will also discuss how these two kinds of matrices appear in problems such as Least Squares, Compressed Sensing and Community Detection in Random Graphs.