



Curso de Doctorado “The Probabilistically Checkable Proof (PCP) Theorem”

Ignacio Villanueva, Universidad Complutense de Madrid

The PCP theorem was proved in 1992 by Arora and Safra refining previous work of Babai, Fortnow and Lund. It is, arguably, the last (so far) major contribution to our understanding of the complexity class NP, both because of the result itself as the new techniques used in its proof. It shows how to transform a certificate (a mathematical proof) of an instance of a decisión problema into another certificate that is checkable by looking only at very few (as few as three!) bits of the proof. It also proves that, for several natural NP-complete natural optimization problems, computing an approximate solution is as difficult as computing the exact solution.

The purpose of the course is to state and prove, with as much detail as posible, the PCP Theorem. No previous knowledge of complexity theory is required.

Fechas: 25 y 27 de enero y 1 y 3 de febrero de 2016

Horario: 10:00 - 12:00 horas.

Lugar: Aula 222



Departamento de
Análisis Matemático

