



Departamento
de Análisis
Matemático



CURSO DE DOCTORADO

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The Probabilistically Checkable Proof (PCP) Theorem

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 decision 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.

Se pretende realizar en 4 sesiones de dos horas cada una en el horario indicado, pero habrá flexibilidad de cara a facilitar la asistencia del alumnado.

**Organizado por el Departamento de Análisis Matemático
con la colaboración del Instituto de Matemática Interdisciplinar (IMI)**

**Fechas: 25 y 27 de enero
y 1 y 3 de febrero de 2016
Horario: De 10 a 12 horas
Lugar: Sala 222
Facultad de CC Matemáticas, UCM**