

# JORNADAS SOBRE TEORÍA DE INFORMACIÓN CUÁNTICA

Miércoles, 25 de Enero de 2012

12:00 h., [Aula Azul](#) (Instituto de Ciencias Matemáticas, ICMAT)

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Grothendieck's inequality applied to quantum entanglement and combinatorial optimization

## Resumen:

Grothendieck's inequality is a fundamental result to the theory of Banach spaces. But many years after Grothendieck published this result, people realized that it also has important applications in theoretical computer science and physics. In particular, the inequality can be used in quantum information theory to study the mysterious phenomenon of quantum entanglement and in combinatorial optimization to prove performance guarantees of efficient approximation algorithms for NP-hard problems. The aim of this talk is to give an overview of these applications and explain why Grothendieck's inequality is a powerful mathematical tool to study them.

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