Universidad Carlos III de Madrid
Department of Mathematics

COLLOQUIA

Martes, 23 de mayo de 2017.

Marc Noy
(Univesitat Politècnica de Catalunya)

Combinatorics, Logic and Probability

Abstract:

A celebrated result from the 1960's is the Zero-One Law for random graphs: given a graph property A that can be expressed in first order logic, the probability that a random graph with N vertices satisfies A tends either to 0 or to 1 when N goes to infinity. A number of extensions to this central result have been obtained over the years. In the talk I will present recent related results on random planar graphs and, more generally, on random graphs that can be embedded in a fixed surface. The main tool for proving logical limit laws are the classical Ehrenfeucht-Fraïssé games. Informally speaking, EF games allow one to characterize logical equivalence of two structures (graphs, trees, partial orders...) in purely combinatorial terms. We will also use typical properties of random graphs in a fixed surface, such as the fact that with high probability such a random graph has a huge connected component whose complement has constant expected size. The talk will be kept at a non-technical level and, in particular no previous knowledge of logic is required.

Univ. Carlos III de Madrid

Coordenadas

Hora 11:00 - 12:00
Lugar Seminario del Departamento de Matemáticas
2.2 D08 Edificio Sabatini.

Dirección

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