

CMMSC and NCTS

Joint Seminar on Discrete Mathematics

Speaker: Professor Peter J. Cameron

(Queen Mary, University of London)

Topic: The Random Graph

Time: 13:30-15:20,

December 24 and 31, 2010 (Two Fridays)

Venue: NCTU SA223 (交通大學 科學一館 223 室)

Refreshment: 15:30-16:00 pm, NCTU SA322

Abstract

In 1963, P. Erdős and A. Rényi proved the remarkable result that, if a random countably infinite graph X is constructed by choosing edges independently with probability $1/2$, then there is a graph R such that with probability 1, X is isomorphic to R . They gave a non-constructive existence proof, but the graph R was constructed explicitly by R. Rado the following year. The graph R and its automorphism group have many remarkable properties, some of which will be considered in the talk. In fact, the construction of R is a special case of an earlier and more general construction by Fraïssé in the 1950s, which gives many structures with similar properties, such as a generic partially ordered set. An even earlier construction along the lines was that of a celebrated universal Polish space (separable metric space) by P. S. Urysohn in a posthumous paper in 1927, three years after his untimely death at the age of 26.

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