

What is a matroid?

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School of Physical and Mathematical Sciences

Matroids abstract the properties of a finite set of vectors in a vector space. They were introduced by Whitney when he was trying to prove what was then the four colour conjecture. He noticed that a lot of theorems in graph theory were strikingly similar to theorems in linear algebra and he sought the connection. As well as arising in graphs and vector spaces, matroids have applications in combinatorial optimization, coding theory, model theory and possibly even number theory. I would argue that, in their way, matroids are as fundamental as groups or topological spaces. This talk is an introduction to the area. I assume no prior knowledge of matroids. The focus will be to develop intuition for the topic.

Speaker Biography

Prof. Geoff Whittle was born in Tasmania, Australia, where he went to university and gained his PhD degree in 1984. Since 1992, he has been at Victoria University of Wellington in New Zealand where he is currently a Professor of Mathematics. His research is focused on Graph Theory and Matroids. Geoff was the awardee of the New Zealand Mathematical Society Research Award in 1996, and was elected in 2001 as a Fellow of the Royal Society of New Zealand.

Host: Prof. Wu Guohua, Division of Mathematical Sciences, School of Physical and Mathematical Sciences

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