

Colóquio CIDMA / DMat

20 de junho, 17h00

Sala de Atos Académicos

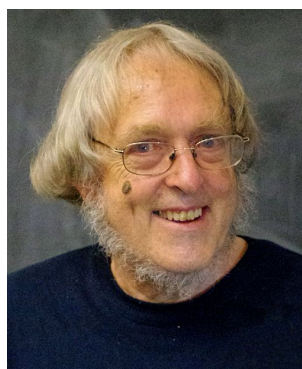
The ADE affair

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The Coxeter--Dynkin diagrams of type ADE occur all over mathematics; they are so ubiquitous that Vladimir Arnold proposed, as a modern Hilbert problem, explaining their many and varied occurrences, and Francis Buekenhout suggested that they could be used as a "calling card" for humanity on a spacecraft leaving our solar system. Areas in which they occur include finite groups generated by reflections, Lie algebras, singularity theory, spectral theory of graphs, general relativity, algebras of finite representation type, and cluster algebras. John McKay found a link between the binary rotation groups and the root systems.

I will describe some of these occurrences and their links, concentrating on the occurrences in discrete mathematics, and will tell some stories of my own interactions with them. This is explained in more detail in a forthcoming book by Pierre-Philippe Dechant, Yang-Hui He, John McKay, and me.



Short bio:

Peter Jephson Cameron (born 23 January 1947) is an Australian mathematician who works in group theory, combinatorics, coding theory, and model theory. He is currently Emeritus Professor at the University of St Andrews and Queen Mary University of London as well as a Fellow of the Royal Society of Edinburgh. Cameron specialises in algebra and combinatorics; he has written books about combinatorics, algebra, permutation groups, and logic, and has produced over 350 academic papers. In 1988, he posed the Cameron–Erdős conjecture with Paul Erdős.

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