

The Oliver Club

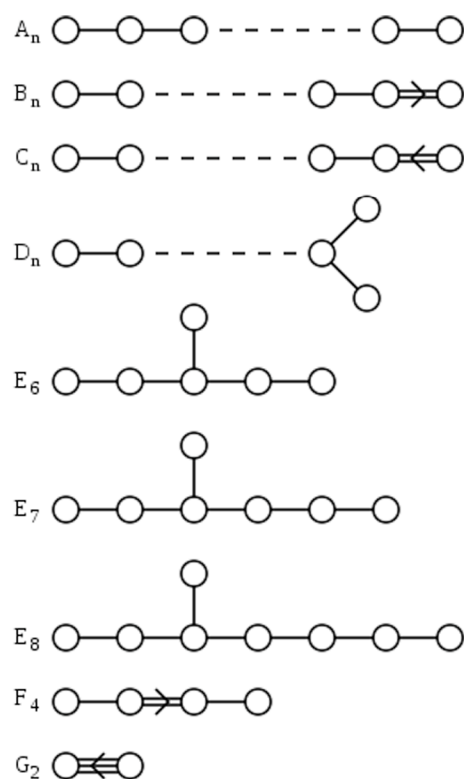
www.math.cornell.edu/~oliver/

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Root Systems, Coxeter-Dynkin Diagrams and their Applications

Dynkin diagrams allow one to compress much information about a Lie algebra and its representations in a simple graphic code. It is well known that these diagrams are closely related to Coxeter graphs describing finite reflection groups, and they play a fundamental role in many other areas of mathematics and physics.

In Lie theory, the study of transformation groups leads to the problem of classifying subalgebras of a given Lie algebra. In the early 50's, Dynkin developed a combinatorial approach to this classical problem based on describing the Weyl orbits of subsystems of the Lie algebra roots. Since then much work has been done in extending and refining Dynkin's classification. In this talk, we will explain this classification and discuss some recent developments. In particular, we will introduce a new tool — enhanced Dynkin diagrams (EDD) — which allow us to fill in some gaps in the original classification and solve several related problems. (The talk is based on joint work with E. Dynkin.)



Thursday, April 16, 2009
at 4:25 PM in 251 Malott Hall

Refreshments will be served at 3:55 PM in the Mathematics Department lounge (532 Malott Hall).