
THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
Algebraic Geometry and Representation Theory Seminar

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What Atlas can do

Abstract:

The Atlas of Lie groups and representations is a project to use computational methods in representation theory, and in particular to compute the unitary dual. Our algorithms are implemented in the atlas software (www.liegroups.org). Besides computing unitary representations, the software is useful in performing a wide variety of calculations in Lie theory. I will give some examples of what the software can do. Examples include: geometry of the action of symmetric subgroups on the flag variety; the poset of equal rank subgroups of a reductive group; fine structure of centralizers of nilpotent elements; and computation of all unipotent representations of real exceptional groups.