Queen's Algebraic Geometry — Seminar —

JORDAN ALGEBRAS, EXCEPTIONAL GROUPS AND HIGHER COMPOSITION LAWS

SERGI KRUTELEVICH
University of Ottawa

Abstract

Higher composition laws in number theory were discovered by M. Bhargava several years ago. They may be viewed as a generalization of Gauss's law of composition of binary quadratic forms. M. Bhargava also discovered a mysterious connection between higher composition laws and exceptional Lie groups.

In our talk, we will describe an unexpected relation between higher composition laws and the Freudenthal construction in the theory of Jordan algebras. We will show how this construction can be used to shed additional light on existing composition laws, as well as provide new examples of spaces with similar properties.

No background in the theory of Jordan algebras is assumed or required.

Monday, January 24, 2004
2:30pm – 3:30pm
422 Jeffery Hall