
University of Florida, Mathematics Department Fifth Erdos Colloquium

by
Benedict H. Gross *
Harvard University
on

Automorphisms of even unimodular lattices

Date and Time: 4:00 - 5:00pm, Monday, Feb. 24, 2003
Room: 121 Little Hall
Refreshments: The Atrium (LIT 339) at 3:30 pm



OPENING REMARKS
by
Pierre Ramond
Distinguished Professor of Physics

Refreshments: after the lecture, in Little 339

Abstract: An even unimodular lattice L is an orthogonal space over the integers. If the quadratic form is indefinite, these lattices are determined by their signature (p, q) over the reals, which must satisfy $p - q \equiv 0 \pmod{8}$. However, the orthogonal group $O(L)$ is still mysterious. I will describe properties of the characteristic polynomials of orthogonal transformations, and give sufficient conditions on an integral monic polynomial for it to appear in this manner. This is a report on joint work with Curt McMullen, who encountered the problem in an investigation of dynamics on $K3$ surfaces.

Second Lecture: Professor Gross will also give a lecture entitled

"On the exceptional series of Lie groups"

at the Algebra Seminar, Tuesday Feb. 25, 2003, 9:35 - 10:25am, Little 339.

* Benedict H. Gross is George Vasmer Leverett Professor of Mathematics at Harvard University. He has been awarded Cole Prize of the American Mathematical Society in 1987, and he is a Fellow of the American Academy of Arts and Sciences since 1992. He is Dean for Undergraduate Education of Harvard University. Professor Gross has made fundamental contributions to mathematics, in particular in number theory and algebraic geometry.
