

Mathematical Sciences Colloquium

Michigan Technological University

Fisher Hall 132

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1:00 p.m.

Affine Lie Algebras and Beyond

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Abstract: Affine Lie algebras burst onto the mathematical scene in the late 1960s as the most important "new" examples of the recently discovered Kac-Moody algebras. They have a beautiful presentation by generators and relations, and they may also be viewed as extensions of loop algebras, families of maps from the circle to finite-dimensional Lie algebras. They have applications to areas as diverse as combinatorics, number theory, soliton equations, integrable systems, and quantum field theory. In this talk, we will look at a few of the interesting features of their structure and representation theory, and discuss different directions in which these structures may be generalized. No prior familiarity with Lie algebras will be assumed.