Quantum Field Theory and Representation Theory

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Tuesday, June 3, 2004
102 Bradley Hall, 4:00 pm
(Tea 3:30 pm Math Lounge)

Abstract

The subjects of quantum mechanics and representation theory are quite closely related and their histories are significantly intertwined. I'll review some of this history and explain some of the relations between these two subjects. The representation theory of certain infinite dimensional groups, "loop groups", turns out to have important relations to interesting quantum field theories. I'll explain how very recent results of Freed-Hopkins-Teleman suggest an approach to this subject using twisted K-theory.

This talk should be accessible to general faculty.