AMERICAN UNIVERSITY
WASHINGTON, DC

THE DEPARTMENT OF MATHEMATICS AND STATISTICS COLLOQUIUM

Taking Products of Particles: Poincaré Symmetry and Representation Towers

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Abstract: Poincaré symmetry is the requirement that the results of an isolated experiment should not depend on the location, orientation, or constant velocity of the experiment. When this symmetry is implemented in quantum physics, a theory emerges with particles, objects with well-defined mass and spin, as the fundamental building blocks. The subject of this talk is how to put these fundamental blocks together using techniques from group representation theory. The results of this approach are new basis systems for calculating the kinematics of scattering and decay, for studying the quantum information stored in relativistic multi-particle states, and for understanding the structure of composite particles.

Presented by
THE AU MATH/STAT DEPARTMENT AND THE AU CHAPTER OF SIGMA XI
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