Mathematics Graduate Seminar

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1:00p.m., HH-3017

An Invitation to Representation Theory

Abstract:

Since the pioneering works of Ferdinand Georg Frobenius (1849 - 1917) and Issai Schur (1875 - 1941) on representations of groups, Representation Theory has become one of the central themes of algebra and, at the same time, one of its main links to applications in other branches of mathematics and in natural sciences. In particular, starting with Hermann Weyl (1885 - 1955) and Eugene Wigner (1902 - 1995), Lie groups and their representations have been extensively used in quantum mechanics - in spite of the initial reluctance of some physicists, who even referred to this use as "Gruppenpest".
In this talk, I will present some basic examples of representations of algebraic structures (namely, groups and Lie algebras), discuss some classical results and, time permitting, show an application of Representation Theory in mathematical physics..