

*Department of Mathematics,
University of California San Diego*

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Department Colloquium

Anton Zeitlin

Louisiana State University

Geometric wonders of classical and quantum integrable systems

Abstract:

Integrable systems, both classical and quantum, kept reemerging in mathematics and theoretical physics during the past several decades. In this talk, after briefly reviewing classical and quantum integrable systems, I will focus on two recent geometric incarnations of integrable systems based on quantum groups, solved by the algebraic Bethe ansatz method. One is motivated by studying 2- and 3-dimensional supersymmetric gauge theories and mathematically explained through enumerative geometry of quiver varieties. Another comes from an instance of geometric Langlands correspondence. Finally, I will explain the relationship between these two geometrizations and discuss their applications.

Izadi Elham and Dragos Oprea

January 30, 2023

4:00 PM