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Dannie Heineman Prize for Mathematical Physics Prize Lecture: Correlation Functions in Integrable Models II: The Role of Quantum Affine Symmetry
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Since the beginning of 1980s, hidden infinite dimensional symmetries have emerged as the origin of integrability: first in soliton theory and then in conformal field theory. Quest for symmetries in quantum integrable models has led to the discovery of quantum groups. On one hand this opened up rapid mathematical developments in representation theory, combinatorics and other fields. On the other hand it has advanced understanding of correlation functions of lattice models, leading to multiple integral formulas in integrable spin chains. We shall review these developments which continue up to the present time.