



Istituto Nazionale di Fisica Nucleare

Bologna Workshop on:

## CFT AND INTEGRABLE MODELS

and their applications from gauge/gravity dualities to statistical mechanics and quantum information



Contribution ID: 145

Type: **Talk (20 min)**

## New insights into quantum affine Gaudin models

*Monday, 4 September 2023 12:20 (20 minutes)*

Quantum Gaudin models were introduced in 1976 to study integrable spin chains with long-range interactions. Since then, they have found many applications in modern mathematical physics.

The integrable structure of Gaudin models of finite type is very well understood, i.e., there is a precise description of the commutative subalgebra of the conserved charges, and their spectrum can be described with a generalisation of the ODE/IM correspondence, known as the Feigin-Frenkel-Reshetikhin (FFR) approach.

However, the same cannot be said for their affine counterparts, and in this talk, I will summarize some of the most recent results in this direction. In particular, I will describe the construction of a particular Vertex Algebra that could be useful for the generalization of the FFR construction in this context.

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**Session Classification:** Bologna Workshop CFT-IM