Eurostrings 2024



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Type: Talk in parallel session

Learning Integrable Models. From numerics to exact result

Friday 6 September 2024 14:30 (20 minutes)

In my talk, I will introduce a novel AI-based approach to Integrable Models. I will demonstrate how neural networks can be employed to numerically solve the Yang-Baxter equation and discover new integrable spinchains. The Hamiltonians of these spin-chains form projective varieties, and I will show how, by using the Boost operator construction for conserved charges, we derive their analytical forms from the approximate numerical data obtained by the neural network. Finally, I will briefly discuss the extension of our method to 2D Integrable Quantum Field Theories.

Link to publication (if applicable)

Author: Dr SOBKO, Evgeny (London Institute for Mathematical Sciences)Presenter: Dr SOBKO, Evgeny (London Institute for Mathematical Sciences)Session Classification: Parallel sessions

Track Classification: Machine learning and AI