

Quantum group symmetry in CFT

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I discuss applications of a hidden $U_q(\mathfrak{sl}_2)$ -symmetry in CFT with central charge $c \leq 1$ (focusing on the generic, semisimple case, with c irrational). This symmetry provides a systematic method for solving Belavin-Polyakov-Zamolodchikov PDE systems, and in particular for explicit calculation of the asymptotics and monodromy properties of the solutions. Using a quantum Schur-Weyl duality, one can understand solution spaces of such PDE systems in a detailed way. The solutions, in turn, are useful both for CFT questions and for rigorous understanding of the connections of 2D CFT with critical models of statistical physics.

The talk is based on various joint works with Steven Flores, Alex Karrila, and Kalle Kytölä.

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