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The Painlevé I equation and Virasoro algebra

In this talk, I will explain how rank 5/2 representations of Virasoro algebra can be used to compute asymptotic expansion of the tau function of Painleve 1 equation near irregular singularity. The talk is based on recent paper of Hasmik Poghosyan and Rubik Poghossian, where they introduced conformal block with irregular vertex of rank 5/2 and conjectured that it is related to the partition function of H_0 Argyres–Douglas theory. Additionally, I will present some improvements of this construction, which is the part of ongoing paper in collaboration with Oleg Lisovyy, Nikolai Iorgov and Kohei Iwaki.

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