

Abstract Submitted
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A matrix product state method for solving combinatorial optimization problems¹ S.S. PELTON, University of Central Florida, C. CHAMON, Boston University, E.R. MUCCILOLO, University of Central Florida — We present a method based on a matrix product state representation to solve combinatorial optimization problems. All constraints are met by mapping Boolean gates into projection operators and applying operators sequentially. The method provides exact solutions with high success probability, even in the case of frustrated systems. The computational cost of the method is controlled by the maximum relative entropy of the system. Results of numerical simulations for several types of problems will be shown and discussed.

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