

Abstract Submitted
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Algebraic Geometry of Tree Tensor Network States SHAHRZAD JAMSHIDI, JASON MORTON, Pennsylvania State Univ — Tree tensor networks have been used to model the ground states of Hamiltonians in condensed matter physics and quantum chemistry. Exactly which quantum states can be represented by a tree tensor network with a given topology and given restrictions on the parameter tensors? When the restrictions are algebraic, the set of states is a projective algebraic variety. We describe those varieties, using techniques originally developed for phylogenetics.

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