

Tenseurs : information quantique, complexité et combinatoires quantiques

Tensors: Quantum Information, Complexity and Combinatorics

**Albert H. Werner**  
(University of Copenhagen)

### **Optimization at the boundary of the tensor network variety**

---

Tensor network states form a variational ansatz class widely used in the study of quantum many-body systems. If the underlying graph contains a cycle, then the set of tensor network states of given bond dimension is not closed. Recent work has shown that states on the boundary of this variety can yield more efficient representations for states of physical interest, and we define a new ansatz class including such states. We show how to optimize over this class in order to find ground states of local Hamiltonians.