

Wolfgang Lechner

Title: Parity Quantum Computing

Abstract: In this talk I will give an overview about recent developments in the encoding of optimization problems using the parity mapping. The results generalize the LHZ scheme to hypergraphs, problems with k-body interactions and problems with constraints. I will present a compilation procedure that encodes arbitrary k-body interactions on two dimensional grids. The compiler also allows for the encoding of optimization problems with side-conditions. I will demonstrate applications of the parity encoding for both, quantum annealing as well as QAOA.