Day 1 (Poster A)

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Title:An Effective Combination Scheme of Coefficient Bit-width Reducing Methods on Annealing Machines

Abstract:
Annealing machines have been attracting as an efficient way to solve combinatorial optimization problems. To use annealing machines，the problems must be converted into Ising models. An Ising model consists of spins，interactions between spins，and external magnetic fields on spins. Interactions and magnetic fields have coefficients，which bit-widths must not be larger than those annealing machine hardwares can deal with. In this study，we propose an effective combination scheme of the shift method and spin-adding method for reducing coefficient bit-widths in an Ising model. In the experimental results，we demonstrate the proposed scheme less modifies the ground state than the shift method and requires fewer auxiliary spins than the spin-adding method.