Day 4 (Poster F)

Kotaro Takahashi, Keio University

Title:Hybridization of quantum and thermal effect in Ising machines

Abstract:
Various types of Ising machines are currently being developed; for example, some incorporate the concept of quantum annealing, while others incorporate the concept of simulated annealing. We study the performance of Ising machines by hybridization of quantum and temperature effect from a viewpoint of statistical mechanics. The improvement of optimization performance by the hybrid method of quantum and temperature effect reported in a different context from that of Ising machines [K. Kurihara, S. Tanaka, and S. Miyashita, UAI2009], and we apply it to Ising machines. We compare the performance of the Ising machine with the hybrid of quantum and temperature effects, the Ising machine with only quantum or temperature effect for some problems. The work was done in collaboration with Aki Dote (Fujitsu Limited), Hirotaka Tamura (DXR Laboratory Inc.), and Shu Tanaka (Keio University).