

Day 4

Carleton Coffrin, Los Alamos National Laboratory

Title: Benchmarking Ising Model Optimization with Corrupted Biased Ferromagnets

Abstract:

In this work we propose a novel Ising model, Corrupted Biased Ferromagnets (CBFM), for benchmarking optimization algorithms. A detailed evaluation of the CBFM instance class across six algorithm families suggest that the problem is challenging for both heuristics and global optimization approaches. Interestingly, D-Wave's 2000Q quantum annealer excels at finding high quality solutions to the proposed CBFM problem.

This talk provides a detailed investigation into the key features of the CBFM instance to develop an intuition for the structural properties that make it an interesting problem for benchmarking Ising model optimization algorithms.