Two peaks to climb: A multi-critical Ising model JACOB HANSEN, GUS HART, BYU — Advances in our understanding of materials allow us to push technology and innovation to the next level. Computational research is often the tool that allows for the rapid discovery and screening of new materials. Generalized Ising models are commonly used in modeling these new alloys. The classical Ising model set in a triangular lattice with repulsive nearest neighbor coupling and attractive next nearest coupling is of particular interest because while it exhibits two phase transitions it can still be solved analytically. Our goal is to computationally use this model to test advanced algorithms. This allows for the optimization of these algorithms which would improve the predictive capability of computational materials science.

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