

Abstract Submitted
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Using neural networks to probe for the existence of a spin-glass state in a field HUMBERTO MUNOZ-BAUZA, Texas A&M University, FIRAS HAMZE, D-Wave Systems Inc., HELMUT G. KATZGRABER, Texas A&M University — The existence of a spin-glass state in a field remains controversial. Most recently, machine learning techniques have found their way into condensed matter, as well as statistical physics, where neural networks have been trained to classify different phases of matter ranging from ice models to lattice gauge theories or strongly correlated electrons, to name a few. These promising results indicate that neural networks might also be able to discern if spin glasses — model systems that do not display any spatial order but do have a finite-temperature phase transition into a glassy phase at zero field — show signs of criticality when an external field is applied.

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