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Spin glasses on scale-free networks: Simple models to describe opinion formation? HELMUT G. KATZGRABER, Texas A&M University and ETH Zurich, CREIGHTON K. THOMAS, Texas A&M University — We study the critical behavior of Ising spin glasses on scale-free networks using large-scale Monte Carlo simulations. Our results show that when the exponent that describes the decay of the interaction degree in the scale-free graph is strictly larger than 3 the system undergoes a finite-temperature spin-glass transition. However, when the exponent is equal to or less than 3, the spin-glass phase is stable for all temperatures. This robustness to local (temperature) perturbations and global biases (field) is compared to experimental data from social networks.

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