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LiHo_xY_{1-x}F₄ – random field Ising model beyond Imry-Ma

Recently it was shown that the random field Ising model (RFIM) can be realized in the LiHo_xY_{1-x}F₄ in both its spin glass and ferromagnetic phases. This has made possible the experimental study, and intrigued the theoretical study, of the RFIM in novel regimes. Here we discuss the RFIM for a ferromagnet with competing interactions and a nearby spin-glass phase, and for the dilute dipolar glass. Relation to recent remarkable experiments on the ferromagnetic LiHo_xY_{1-x}F₄, and to older experiments on dilute orientational glasses, will be discussed.