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Low-temperature properties of the dilute dipolar magnet $\mathbf{LiHo_xY_{1-x}F_4}$ ANDERS BILTMO, PATRIK HENELIUS, KTH, Stockholm — The phase diagram of the rare-earth compound $LiHo_xY_{1-x}F_4$ is considered as a function of dilution. At low temperatures the material is a good realization of a dipolar Ising magnet. The net magnetization vanishes at high dilution and the glassy behavior that ensues has several interesting features, including a proposed anti-glass phase and anomalous peaks in the specific heat. In this talk we will show results obtained with Monte Carlo techniques and compare them with recent experimental data.

Anders Biltmo
KTH, Stockholm

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