In a magnet, the phase transition to the ferromagnetic state occurs as the temperature \( T \) is decreased below the Curie temperature. To study the “quantum” phase transition, we fix \( T \) at zero Kelvin while varying, instead, the magnetic field \( H \). The archetypal model is the transverse Ising magnet comprised of chains of spins (see Fig. A). A field, transverse to the chains, induces a transition from the ferromagnetic to the disordered state at the quantum critical point (QCP). This model is of great interest because domain walls (which separate spin-up from spin-down domains) mimic the quark-antiquark string \((q, \bar{q})\) (Fig. A). The material that best matches the theoretical Ising model is CoNb\(_2\)O\(_6\). Its QCP occurs at a transverse field \( H \) of 5.2 Tesla (Fig. B). Recently, Liang et al. [1] reported a detailed low-temperature heat capacity experiment that uncovered several unusual features. At the QCP, the heat capacity rises to a prominent peak that accounts for \( \sim 1/3 \) of all the spin degrees of freedom (Fig. C). Most interestingly, they find that the heat capacity of the spin excitations close to the QCP are fermion-like, reminiscent of the exact results obtained for an isolated chain (Jordan-Wigner fermion).


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