

The hitchhiker's guide to the kagome lattice

Subject area: Kagome systems

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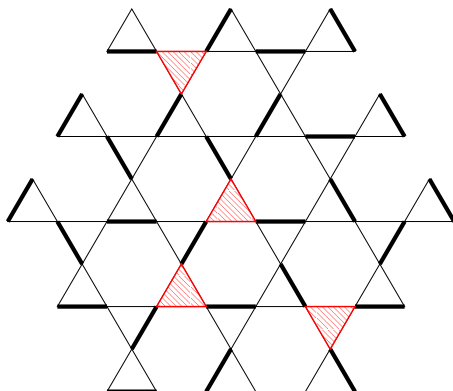


Fig. 1. A figure and its caption. The EPS file used in it is named DentFig1.eps.

The Japanese word *kagome* means a bamboo-basket (*kago*) woven pattern (*me*) that is composed of interlaced triangles whose sites have four nearest neighbors [1]. This lattice was first introduced into statistical physics by Kodi Husimi at Osaka University. Husimi's research associate Itiro Syôzi studied the Ising ferro and antiferromagnets on this lattice [2].

In the late 1980s, Veit Elser initiated studies of the $S = 1/2$ Heisenberg antiferromagnet on kagome [3]. This system is a prime candidate for an unusual ground state without long-range magnetic order and with exotic magnetic excitations [4]. It may finally realize Phil Anderson's proposal of a quantum state with resonating valence bonds [5], originally made for the triangular lattice. A snapshot of such a state on kagome is shown in Fig. 1.

Successful synthesis and characterization of $S = 1/2$ antiferromagnets with this sort of spin arrangements [6] promises some serious fun for both experimentalists and theorists in the near future.

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