

New Two-Dimensional Spin Gap Material $\text{SrCu}_2(\text{BO}_3)_2$

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I review the magnetic properties of $\text{SrCu}_2(\text{BO}_3)_2$ from an experimental viewpoint. It is concluded that this material can be regarded as a highly frustrated two-dimensional spin system, realizing the Shastry-Sutherland model with an exact dimer ground state. The spin-gap size, the intra- and interdimer exchange constants were determined to be, respectively, $\Delta=34$ K, $J=110$ K and $J'=75$ K. Furthermore, nearly flat band structures of the triplets excitations as well as quantized magnetization plateaux are characterized by a localized nature of the triplets.

KEYWORDS: $\text{SrCu}_2(\text{BO}_3)_2$, spin gap, orthogonal dimer lattice, Shastry-Sutherland model, exact dimer ground state, magnetization plateaux, spin frustration