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Title:	Quantum disordered state in the J(1)-J(2) square-lattice antiferromagnet Sr <sub>2</sub> Cu(Te <sub>0.95</sub> W <sub>0.05</sub> )O <sub>6</sub> .
Authors:	Singh, Yogesh (/jspui/browse?type=author&value=Singh%2C+Yogesh)
Keywords:	Muon spin relaxation & rotation Specific heat measurements
Issue Date:	2021
Publisher:	American Physical Society
Citation:	Physical Review Materials, 5(1).
Abstract:	The B-site ordered double perovskites Sr <sub>2</sub> Cu(Te <sub>1-x</sub> W <sub>x</sub> )O <sub>6</sub> provide an excellent arena for investigating exotic phases expected for the J <sub>1</sub> -J <sub>2</sub> square-lattice Heisenberg antiferromagnet. Here, combining magnetic susceptibility and specific-heat measurements with electron spin resonance (ESR) and muon spin rotation/relaxation ( $\mu$ SR) techniques, we explore a spin-liquid-like state in the vicinity of the Néel critical end point ( $x = 0.05-0.1$ ). The specific heat and the ESR and muon relaxation rates give evidence for an energy hierarchy of low-energy excitations, reminiscent of randomness-induced singlet states. In addition, the weak transverse $\mu$ SR data show a fraction of frozen magnetic moments in the random-singlet background. The origin of a random-singlet-like state near the phase boundary is discussed in terms of concomitant exchange randomness and local strain generated by the W <sup>6+</sup> -for-Te <sup>6+</sup> substitution.
Description:	Only IISER Mohali authors are available in the record.
URI:	<a href="https://doi.org/10.1103/PhysRevMaterials.5.014411">https://doi.org/10.1103/PhysRevMaterials.5.014411</a> ( <a href="https://doi.org/10.1103/PhysRevMaterials.5.014411">https://doi.org/10.1103/PhysRevMaterials.5.014411</a> ) <a href="http://hdl.handle.net/123456789/5215">http://hdl.handle.net/123456789/5215</a> ( <a href="http://hdl.handle.net/123456789/5215">http://hdl.handle.net/123456789/5215</a> )
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