

Magnetic order in the pseudogap phase of high- T_C superconductors

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One of the leading issues in high- T_C superconductors is the origin of the pseudogap phase in underdoped cuprates. Using polarized elastic neutron diffraction, we identify a novel magnetic order in the $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ system*. The observed magnetic order preserves translational symmetry as proposed for orbital moments in the circulating current theory of the pseudogap state. To date, it is the first direct evidence of an hidden order parameter characterizing the pseudogap phase in high- T_C cuprates.

* B. Fauqué, Y. Sidis, V. Hinkov, S. Pailhès, C.T. Lin, X. Chaud and P. Bourges, at <http://fr.arxiv.org/abs/cond-mat/0509210>.