

Influence of the Pseudogap on the Inelastic Neutron Scattering Spectra of the Underdoped Lanthanum Cuprate

LOU Ping,^{1,2} CAO Lie-Zhao,¹ and WU Hang-Sheng¹

¹ Structure Research Laboratory and Department of Physics, University of Science and Technology of China, Hefei 230026, China

² Department of Physics, Anhui University, Hefei 230039, China

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Abstract: The influence of pseudogap on the inelastic neutron scattering spectra of the underdoped lanthanum cuprate is studied on the basis of the model which incorporates both the superconducting state and pseudogap state. It is found that the striking effects of the influence of the pseudogap on the incommensurability of the spin excitation spectrum are that in the superconducting state the pseudogap makes the intensity of the incommensurate peak increase, in the normal state the pseudogap not only makes the intensity of the incommensurate peak increase, but also sharpens the incommensurate peak and increases incommensurability.

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