Condensed Matter Physics Seminar

Large-N expansion for the t-J model based on a path integral representation for Hubbard operators: Applications to cuprate high-T_c superconductors

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Seminar room,
Theoretical Research Building, Namiki

In this talk I discuss one of the main topics presented in my application to the JSPS S-term invitation fellowship hosted by NIMS. In the first part of the talk, I discuss the path integral representation for Hubbard operators, and its application to the t-J model. I develop a large-N expansion that allows going beyond the mean-field level. In the second part of the talk, I summarize the main results obtained for cuprate superconductors on: ARPES, Raman, transport, the pseudogap phase, and the charge excitations recently discovered in X-rays experiments. The last topic is a subject in cooperation with Japanese scientists.