Max-Planck-Institut für Physik komplexer Systeme, Dresden, Germany

International Seminar and Workshop on

Strong Correlations and ARPES: Recent Progress in Theory and Experiment

Seminar: March 29 - May 6, 2005
Workshop: April 4 - 8, 2005

Scientific coordination:

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In 2005 we celebrate the 100th anniversary of the explanation of the photoelectric effect by Albert Einstein. On occasion of this event, a workshop and a seminar on photoemission spectroscopy is organized in the Max Planck Institute for the Physics of Complex Systems in Dresden. Photoemission spectroscopy and in particular the angle resolved version (ARPES) has conquered a central position in the research on the electronic structure and correlation effects in solids, because it gives access to the momentum and energy resolved self-energy of low lying single particle excitations in the many electron system. During the last decade ARPES has experienced an explosive period of qualitative and quantitative improvements. On the one hand new photon sources, new cryo-manipulators, new analysers, and new detectors have induced an enormous increase in energy and angular resolution. In addition, spin analysis of the photoelectrons and the availability of circularly polarized light has extended the experimental possibilities. On the other hand, a very large progress in the theoretical understanding of the photoemission process and the many particle properties of correlated systems has contributed to the recent development in ARPES. The aim of the meeting is to discuss current progress and, in particular, to explore future trends and directions. Furthermore, the meeting should help to intensify the exchange between experiment and theory. The one-week workshop will primarily consist of lectures given by invited speakers and poster presentations. The Seminar will deepen the data analysis and the theoretical understanding of ARPES spectra.

Among the topics to be covered :

new experimental developments in ARPES, 'ab initio' calculations of surface and matrix element effects, dynamical mean field theory and extensions, numerical renormalization group, Kondo screening, dimensional crossover, exact diagonalisation of finite systems, effective boson-fermion models, phenomenological self-energy corrections of non-Fermi liquid type, unconventional order parameters, transition metal oxides, 4f and 5f systems

Invited speakers: (to be confirmed)*

P. Aebi (Neuchâtel)
A. Bansil (Boston)
P. Carra* (Grenoble)
A. Damascelli (Vancouver)
H. Eschrig (Dresden)
A. Georges (Paris)
S. Hüfner (Saarbrücken)
A. Kaminski* (Ames)
B. Laughlin* (Stanford)
D. Malterre (Nancy)
C. Natoli* (Frascati)
D. Pines* (Los Alamos)
M. Randeria (Columbus)
D. Sarma (Bangalore)
Z.-X. Shen (Stanford)
L. H. Tjeng (Köln)
P. Wölfle (Karlsruhe)
J. Allen (Ann Arbor)
S. Borisenko (Dresden)
A. Chubukov (Madison)
J. Denlinger* (Berkeley)
A. Fujimori (Tokyo)
M. Grioni (Lausanne)
M. Imada (Tokyo)
D. Khomskii (Köln)
S. Lichtenstein* (Hamburg)
W. Metzner (Stuttgart)
M. Norman (Argonne)
D. Poilblanc* (Toulouse)
J. Ranninger (Grenoble)
G. Sawatzky (Vancouver)
S. Shin (Tokyo)
C. Varma (Riverside)
G. Zwicknagl (Braunschweig)
O. Andersen* (Stuttgart)
N. Brookes* (Grenoble)
E. Chulkov* (San Sebastian)
D. Dessau* (Boulder)
P. Fulde (Dresden)
O. Gunnarsson (Stuttgart)
P. Johnson (Brookhaven)
A. Lanzara* (Berkeley)
M. Lindroos (Tampere)
T. Mizokawa* (Tokyo)
A. Oles (Kracow)
M. Potthoff (Würzburg)
F. Reinert* (Würzburg)
W. Schattke (Kiel)
S. Suga (Osaka)
D. Vollhardt (Augsburg)
P. Anderson* (Princeton)
J.-C. Campuzano (Argonne)
R. Claessen (Augsburg)
H. Ebert (München)
F. Gebhard (Marburg)
R. Hayn (Marseille)
Y. Joly (Grenoble)
C. Laubschat (Dresden)
S. Maekawa (Sendai)
N. Nagaosa* (Tokyo)
J. Osterwalder* (Zürich)
T. Pruschke (Göttingen)
M. Rice* (Zürich)
K. Schönhammer (Göttingen)
T. Takahashi (Sendai)
W. Weber (Dortmund)

Applications are welcome and should be made by using the application form on the workshop web page (see web page below). The number of attendees is limited. The registration fee for the workshop is €100. Costs for the accommodation and meals will be covered by the Max Planck Institute. In exceptional cases, funding is available to partially cover travel expenses.

Deadline for applications is December 31, 2004.

For further information please contact:
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