

## **ESF-Science Meeting Final Report on: workshop: "Principles and Design of Strongly Correlated Electron Materials"**

Held: August 2-15 2010

Location: ICTP Trieste, Italy

### **Workshop Organizers:**

Andrey Chubukov	(U. Wisconsin, Madison, USA)
Piers Coleman	(Rutgers, Piscataway, USA)
Andy Schofield	(U. Birmingham, UK)
Erio Tosatti	(SISSA & ICTP, Trieste, Italy)
Hide Takagi	(ISSP, Japan)

### **Summary of the Workshop**

The workshop brought together more than 100 researchers from across the world and covered a wide-range of topics in Strongly Correlated Materials. There were almost 40 presentations by world experts each followed by rigorous discussion and debate. In addition there were short sessions where young researchers were able to present their latest results. Two poster sessions were supplemented by very short talks by every poster presenter. The net result was a lively exchange of ideas which has motivated the community and is likely to have lasting impact on the field. One key feature of the workshop was a blog where the content of presentations and significantly, the exchange between participants was captured. This provides a lasting record of the vibrancy of the debate.

The key topics which were presented and discussed include the design and search for new superconducting materials, new understanding of the heavy Fermion state, competition between order parameters and multiferroic materials. The key themes of quantum magnetism, materials design, superconductivity and electron localization pervaded all of the discussion. There was a very constructive balance of experimental work, theoretical insight and fundamental materials' design presented. The final outcomes of the workshop remain to be seen but already there have been tangible new collaborations that have sprung directly from the activities of the workshop.

In summary the workshop achieved all of the intended aims of the original proposal.

Attached to this report, please find

- Final Programme
- The details of the participants, speakers and organizers.

## **Scientific Content of the Workshop**

A complete description of the scientific content of the workshop may be found on the conference blog. This is freely available and contains an overview of every presentation at the meeting written by an independent observer and a record of the questions and discussion surrounding the talk. In almost all cases there is a copy of the presentation. The blogs are supplemented with references, pictures of slides and the participants, and are available for online comment by any reader.

The blog may be found here: <http://ictp2010.blogspot.com/>

The event was sponsored by the European Science Foundation through Intel Biomat, the National Science Foundation and ICAM, Riken, Japan, and of course mainly by the Abdus Salam International Center for Theoretical Physics who also offered excellent secretarial service and their best venue, the Main Auditorium.

The workshop brought together more than 100 people researching in the area of strongly correlated quantum systems. According to ICTP's mission, they came both from established laboratories based in rich countries, and from more isolated institutions in emerging countries. Scientifically they belonged broadly, in two distinct research fields: experimental materials physics and theoretical condensed matter physics. The participants included a mixture of experimentalists and theorists and spanned the career stages from doctoral students to senior faculty. Although the workshop was very wide-ranging in its coverage of strongly correlated materials, there was a special emphasis, particularly in discussions on the challenges we face trying to discover new types of strongly correlated electron materials.

The style of the workshop was designed to foster strong interaction between participants. This was done by making sure invited talks left plenty of time for discussion and questions, and by ensuring there were plenty of opportunities for participants to present their research. These opportunities included 15 minute presentations as well as two poster sessions where each presenter gave a brief oral overview of their posters. The talks were organized according to the Frauenfelder principles: with 20 minutes of discussion associated with each 40 minute talk. In addition, each speaker was asked to focus the first 10 minutes of his or her talk on the motivation and key issues behind the research. Of course there was also plenty of time for less structured discussion and debate. One or more of the Directors took upon themselves the task to interrupt and ask questions of pedagogical value throughout the Workshop. The end result was a highly successful and vibrant meeting.

The formal program is attached and the talks may be downloaded from the conference website:

[http://cdsagenda5.ictp.trieste.it/full\\_display.php?ida=a09160](http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a09160)

It is also attached to this report.

Dividing the scientific content into the original themes identified in the proposal:

- 1) New developments in quantum magnetism of localized electrons:** Satoru Nakatsuji showed us the rich physics of Pr<sub>2</sub>Ir<sub>2</sub>O<sub>7</sub> as a chiral spin liquid. We seem to be getting ever closer to the fabled quantum spin liquid state and Yuji Matsuda (Kyoto) gave us one of the most convincing demonstrations yet of such a novel state. Akira Furusaki (Riken) offered a theoretical perspective on this states. They arises from geometric frustration which Meigan Aronson (Stony Brook, BNL) was also using to tune quantum critical points. Natalia Perkins (Wisconsin) presented work on the orbital physics of localized electrons.
  
- 2) Materials design, novel phases and multifunctionality:** Eric Bauer (Los Alamos) discussed how one might design new superconductors. It was a theme that would recur throughout the meeting: Pascoal Pagliuso (Campinas) thought the key was in tuning the hybridization. Our deliberations culminated in Paul Canfield (Ames) and Laura Greene (Illinois)'s two presentations on the search or new materials which challenged the theorists. They fought back though as a theory of how spins become pairs was presented by Rebecca Flint (Rutgers). It was augmented by the chemists view coming from Yuri Grin (Dresden). Mechanical exfoliation was discussed by Ken Burch (Toronto) and gave a new avenue to explore in materials design. The achievements of Yoshihiro Iwasa (Tohoku) in being able to tune materials with electric fields impressed the meeting. Sang-Wook Cheong (Rutgers) steered us through the rich and complex phases of multiferroics where order parameter competition rules. The competition between order parameters and their fluctuations is not just an issue for superconductivity (see below) but also for quantum criticality as shown by Markus Garst (Köln). The thermodynamics of a quantum critical and novel material were shown by Andy Mackenzie (St Andrews).
  
- 3) New perspectives on electron localization:** Stefan Wirth (Dresden) discussed the 115 compounds and issues associated with the delocalization of f-electrons in heavy fermion compounds and Silke

Paschen (Wien) gave the latest update on Hall measurements at the quantum critical point. The hidden order in  $\text{Uru}_2\text{Si}_2$  was shown in new light by Mohammad Hamidian (Cornell) via STEM – a truly remarkable presentation both for content and delivery. Dirk Morr's (North Western) theory of how tunnelling works in heavy fermions complemented these earlier presentations and provoked much discussion. The Kondo effect in graphene was presented by Matthias Vojta (now Dresden). The Dirac nature of the fermions was also demonstrated in a topological insulator by Hanaguri (Riken). The Mott transition is strongly influencing superconductivity in  $\text{CsC}_{60}$  according Massimo Capone's work and Henri Alloul (Orsay) showed us the corresponding NMR picture.

- 4) **The interplay between magnetism and superconductivity in the pnictides:** Dai Aoki (Grenoble) developed this issue in the context of the uranium compounds and field induced superconductivity. Suchitra Sebastian (Cambridge) is using quantum oscillations to see if order of some type is reconstructing the Fermi surface of the cuprates. Could that order break time-reversal symmetry – yes according to Aharon Kapitulnik (Stanford). Yet magnetism is clearly important as Bernard Keimer (Stuttgart) showed with neutron scattering. The competition between magnetism and pairing for the electron doped cuprates was tackled by Rick Greene (Maryland) and Adam Kaminski (Ames) considered it via ARPES. A theoretical framework for this competition was outlined by Yu Lu (Beijing) via gauge theory. Turning to the pnictides, Peter Hirschfeld (Florida) discussed the nodal structure of their order parameter and Zlatko Tesanovic (Maryland) overviewed the existing theory. Ilya Eremin (Bochum) focused on the magnetically ordered state - its criticality being developed by Kenji Ishida (Kyoto) via NMR. Lara Benfatto (La Sapienza) showed us how the multiband character of the pnictides was significant and Girsh Blumberg (Rutgers) indicated how Raman spectroscopy can demonstrate this. We also saw the ARPES view from Shik Shin (Tokyo). How this fits together in the wider context was clarified by Hide Takagi (Tokyo) who discussed new materials without iron. Even in the iron compounds there are issues to understand about the local nanoscale structure as argued by Bernd Buechner (Dresden).

In summary, the scientific content was lively and provocative and engaged the entire workshop.

## Outcomes:

As it is less than two months since the end of the meeting so it is still early days to see the fruits of the conference appearing in print. One of the goals was to inspire new ideas and collaboration between material synthesis and theoretical condensed matter physics. While it is too early to judge the success in meeting these goals, there are promising signs already. The following collaborations and new projects were started at the meeting:

Collaboration between **Dr. Piers Coleman** of Rutgers University and the Campinas Group of **Dr. Pascoal Pagliuso** and **Dr. Cris Adriano**, to study the behavior of iron based superconductors in the limit of dilute iron concentration.

Inspired by the talk of **Dr. Natasha Perkins** of University of Wisconsin, **Dr. Piers Coleman** has initiated a project to understand how degenerate  $e_2g$  crystal fields in tetragonally co-ordinated Fe atoms may induce composite  $s_{\pm}$  pairing in the Fe- based superconductors.

**Dr Lara Benfatto** was inspired through her discussions with **Dr. H. Alloul** and **Dr. F. Rullier-Albenque** at the workshop to work on a new project, the temperature dependence of the carrier density in pnictides, as resulting from the exchange of spin fluctuations between hole and electron pockets.

**Dr Henri Alloul** and his group at Orsay initiated a new collaboration with the theory group involving **Drs. M. Capone, Dr. E. Tosatti** and **Dr. M. Fabrizio** at Sissa, to understand their high-pressure NMR measurements on the Mott metal insulator transition in  $Cs_3C_60$  compounds. Dr. Alloul has provided the Sissa group with some preliminary unpublished results on which discussion will be pursued in forthcoming months.

**Dr Denis Arcon** and his group from Ljubljana also intervened, presented a short talk on the same subject, and initiated a collaboration with the same theory group.

Collaboration between **Dr. Aharon Kapitulnik**, Stanford University and **Dr. Sang-Wook Cheong**, Rutgers University on the correlation between fragile impurity ferromagnetism and charge ordering in complex mixed-valent materials. Kapitulnik has developed a highly-sensitive Kerr microscope technique that can detect the presence of a minute ferromagnetic that breaks time-reversal symmetry. Cheong has investigated numerous mixed-valent materials exhibiting charge/orbital ordering at low temperatures. In particular, they are exploring the possibility of observing the appearance of minute ferromagnetism below charge ordering transition temperature, at which a metal-insulator transition occurs.

Inspired through their extensive discussions at the workshop, **Dr. Cheong** (Rutgers) and **Dr. Kapitulnik** (Stanford) have initiated two new projects: the first on  $CuIr_2S_4$  that undergoes charge/orbital transition at 240 K, and the second on colossal magnetoresistive manganites that are highly susceptible to charge/orbital transition through various ionic substitution.

**Dr. Kenneth Burch** of the University of Toronto and **Dr. Y. Iwasa** of Tohoku University have initiated a new collaboration on ionic liquid gating of strongly correlated compounds. Specifically their groups will fabricate novel materials on

the nanoscale (high temperature superconductors and Topological Insulators) and tune their properties with an electrostatic gate. By monitoring subtle changes in the conductivity, hall and optical properties of these devices, they hope to unravel the physical origins of their novel properties. In addition this work may enable new devices with improved energy efficiency.

**Dr Baskaran** of Chennai initiated a new discussion with Dr. E. Tosatti of Trieste, concerning the strongly correlated nature of high-pressure Oxygen.

At the initiative of **Dr. Tosatti**, **Dr. Y. Iwasa** of Japan initiated a new discussion with **Dr. V. Kravtsov** of Trieste about the possible interpretation of the enhanced superconductivity at insulator-metal threshold in a new class of Zr-N-Cl compounds he had masterfully presented at the workshop.

**Dr Stefan Wirth** of the Max Planck Institute for Chemical Physics, Dresden and **Dr. Dirk Morr** of the University of Illinois, Chicago, initiated a collaboration on the scanning tunnelling spectroscopy of YbRh<sub>2</sub>Si<sub>2</sub>.

Inspired by the talks by **Drs. S. Shin and H. Takagi** from the University of Tokyo on new Fe-based superconductors, Drs. **A. Chubukov** (Wisconsin) and **I. Eremin** (Bochum) have initiated a new collaboration on the analysis of relative magnitudes of the superconducting gaps on hole and electron Fermi surfaces in these new superconductors. The goal of this project is to verify whether one can obtain the information about yet unknown momentum-dependent gap along electron Fermi surface from the analysis of  $2 \Delta/T_c$  ratio of the gaps along the hole Fermi surfaces.

**Drs. Lara Benfatto** and **A. Chubukov** conducted numerous discussions at the workshop on the calculations of superconducting condensation energy in systems, e.g., cuprates and pnictides, where the pairing originates from the exchange of spin fluctuations. They plan to jointly address the issue of the interplay between magnetic and fermionic contributions to the condensation energy.

**Drs A. Schofield** and **S. Sebastian** began a collaboration on the role of frustration in suppressing order in heavy fermion quantum critical points

**Drs. Z. Tesanovic, P. Hirschfeld, I. Eremin,** and **A. Chubukov** conducted numerous discussions at the workshop on the gap structure in pnictide superconductors and potential locations of the nodes of the superconducting gap.

Without doubt this meeting will have lasting impact and we can expect to see that reflected in new work and directions in the coming months.



The Abdus Salam  
International Centre for Theoretical Physics



## Workshop on Principles and Design of Strongly Correlated Electronic Systems

Cosponsor(s): Institute for Complex Adaptive Matter (ICAM-I2CAM) Interdisciplinary Approaches to Functional Electronic and Biological Materials (INTEL-BIOMAT) funded by the European Science Foundation (ESF) RIKEN Advanced Science Institute

Organizer(s): Directors: A. Chubukov, P. Coleman, A. Schofield and H. Takagi. Local Organizer: E. Tosatti  
Trieste - Italy, 02 - 13 August 2010

**Venue: Leonardo da Vinci Building Main Lecture Hall**

### Final programme

**Monday, 2 August 2010 - HEAVY FERMIONS** (Room: Leonardo da Vinci Building Main Lecture Hall)

**2 August 2010**

- 08:30 - 09:20** (Room: Leonardo da Vinci Building, Lobby)  
--- Registration at the Leonardo Building, Reception area ---
- 09:20 - 09:30** **Opening Remarks by Profs. Chubukov, Coleman, Schofield, Takagi and Tosatti**
- 09:25 - 10:25** --- SESSION CHAIR: Piers COLEMAN ---
- 09:30 - 10:30** **S. WIRTH / MPI, Dresden, Germany**  
**Magnetotransport and tunneling investigations on heavy-fermion systems**
- 10:30 - 11:00** --- Coffee Break ---
- 10:55 - 12:55** --- SESSION CHAIR: Andy SCHOFIELD ---
- 11:00 - 12:00** **Dai AOKI / CEA/SPSMS, Grenoble, France**  
**Re-entrant superconductivity and the field-induced magnetic instability in uranium compounds**
- 12:00 - 13:00** **J.C. SEAMUS DAVIS / Cornell University, Ithaca, U.S.A.**  
**Imaging the Fano lattice to "hidden order" transition in URu<sub>2</sub>Si**  
VIDEO CONFERENCE - Talk to be presented by Mohammed HAMIDIAN

13:00 - 15:00 --- Lunch Break ---

**Monday, 2 August 2010 - MATERIALS DESIGN (Room:Leonardo da Vinci Building Main Lecture Hall)**

**2 August 2010**

14:55 - 16:55 --- SESSION CHAIR: James C. SEAMUS DAVIS ---

15:00 - 16:00 **E. BAUER / Los Alamos National Lab., U.S.A.**  
**Understanding anisotropy to develop superconductors by design**

16:00 - 16:30 --- Coffee Break ---

16:30 - 17:30 **J. GRIN / MPI, Dresden, Germany**  
**Chemistry of strongly correlated systems**

18:30 - 20:30 (Room: Leonardo da Vinci Building Terrace)  
--- WELCOME RECEPTION ---

**Tuesday, 3 August 2010 - Pnictides / Strong Correlations (Room:Leonardo da Vinci Building Main Lecture Hall)**

**3 August 2010**

08:55 - 10:55 --- SESSION CHAIR: Andrey CHUBUKOV ---

09:00 - 10:00 **S. SEBASTIAN / University of Cambridge, U.K.**  
**Quantum oscillations**

10:00 - 11:00 **Z.B. TESANOVIC / Johns Hopkins University, Baltimore, U.S.A.**  
**Magnetism and superconductivity in pnictides**

11:00 - 11:30 --- Coffee Break ---

11:25 - 12:25 --- SESSION CHAIR: Lara BENFATTO ---

11:30 - 12:30 **P. HIRSCHFELD / University of Florida, Gainesville, U.S.A.**  
**Accidental order parameter nodes in Fe-pnictides: Origins and implications**

12:30 - 14:30 --- Lunch Break ---

**Tuesday, 3 August 2010 - Session to be determined (Room:Leonardo da Vinci Building Main Lecture Hall)**

**3 August 2010**

14:25 - 16:25 --- SESSION CHAIR: Dirk K. MORR ---

14:30 - 15:30 **M. CAPONE / University of Rome La Sapienza, Italy**  
**Signatures of strongly correlated superconductivity in expanded Cs<sub>3</sub>C<sub>60</sub>**

15:30 - 16:00 --- Coffee Break ---

16:00 - 17:00 **Lu YU / Institute of Physics, Chinese Academy of Sciences, Beijing, China**  
**Non-BCS superconductivity in underdoped cuprates by spin-vortex attraction**



**Wednesday, 4 August 2010 - Pnictides** (Room:Leonardo da Vinci Building Main Lecture Hall)

**4 August 2010**

**08:55 - 10:55** --- SESSION CHAIR: Peter HIRSCHFELD ---

**09:00 - 10:00** **I. EREMIN** / *Ruhr University Bochum, Germany*  
**Selection of the magnetic order and spin excitations in the SDW state of iron-based superconductors**

**10:00 - 11:00** **L. BENFATTO** / *CNR-ISC and University of Rome La Sapienza, Italy*  
**Superconducting properties of pnictides within a low-energy multiband approach**

**11:00 - 11:30** --- Coffee Break ---

**11:25 - 12:25** --- SESSION CHAIR: Henri ALLOUL ---

**11:30 - 12:30** **K. ISHIDA** / *Kyoto University, Japan*  
**NMR Studies on Iron-Pnictide Superconductors  $\text{BaFe}_2(\text{As}_{1-x}\text{P}_x)_2$  and  $\text{LaFeAs}(\text{O}_{1-x}\text{F}_x)$**

**12:30 - 14:30** --- Lunch Break ---

**Wednesday, 4 August 2010 - POSTER SESSION**

**4 August 2010**

**14:25 - 16:55** --- SESSION CHAIR: Andy SCHOFIELD ---

**14:30 - 17:00** **Poster Session**  
Refreshments will be available during the Poster Session

**Thursday, 5 August 2010 - MOTT and KONDO PHYSICS** (Room:Leonardo da Vinci Building Main Lecture Hall)

**5 August 2010**

**08:55 - 10:55** --- SESSION CHAIR: Kenneth BURCH ---

**09:00 - 10:00** **M. VOJTA** / *Universitat zu Koeln, Germany*  
**Quantum critical Kondo screening in graphene**

**10:00 - 11:00** **H. ALLOUL** / *Universite Paris XI (Paris-Sud), Orsay, France*  
**Mott transition in the fullerene compounds**

**11:00 - 11:30** --- Coffee Break ---

**11:25 - 12:25** --- SESSION CHAIR: Piers COLEMAN ---

**11:30 - 12:30** **D. MORR** / *University of Illinois at Chicago, U.S.A.*  
**Defects, density of states, and differential conductance in heavy fermion systems**

**12:30 - 14:30** --- Lunch Break ---

**Thursday, 5 August 2010** (Room:Leonardo da Vinci Building Main Lecture Hall)

**5 August 2010**

**14:25 - 16:25** --- SESSION CHAIR: Andrey CHUBUKOV ---

**14:30 - 15:30** **SHORT TALKS BY PARTICIPANTS**

Proton-based studies of the Fe superconducting parent compounds (Jason HANCOCK - University of Geneva, Switzerland) 15'

Nematic order in Fe-pnictides (Rafael FERNANDES - Iowa State University, Ames, U.S.A.) 15'

Hall effect and resistivity studies of Fe-pnictides (Florence RULLIER-ALBENQUE - CEA Saclay, Gif-sur-Yvette, France) 15'

Penetration depth measurements of Fe-pnictides (Ryan GORDON - Iowa State University, Ames, U.S.A.) 15'

**15:30 - 16:00** --- Coffee Break ---

**16:00 - 17:15** **SHORT TALKS BY PARTICIPANTS**

Superconductivity competing with the antiferromagnetic insulating state in alkali-doped fullerenes (Denis ARCON - University Ljubljana/Institute Jozef Stefan, Slovenia) 15'

Elastic transport properties of YBCO/Nb hybrids (Boris CHESCA - Loughborough University, U.K.) 15'

Competition of Coulomb repulsion and electron-phonon coupling in strongly correlated electron structures (Johannes BAUER - MPI, Stuttgart, Germany) 15'

Unconventional quantum criticality and T/B-scaling in beta-YbAlB<sub>4</sub>: a theorist's perspective (Andriy NEVEDOMSKYY - Rutgers University, Piscataway, U.S.A.) 15'

Lifshitz transition in an anisotropic 2D lattice (Sam CARR - Karlsruhe Institute of Technology, Germany) 15'

**19:30 - 19:30** --- SOCIAL DINNER - please see attached ---

**Friday, 6 August 2010 - To be determined** (Room:Leonardo da Vinci Building Main Lecture Hall)

**6 August 2010**

**08:55 - 10:55** --- SESSION CHAIR: Natalia PERKINS ---

**09:00 - 10:00** **K. BURCH** / *University of Toronto, Canada*  
**Tuning materials with mechanical exfoliation**

**10:00 - 11:00** **Y. IWASA** / *Tohoku University, Sendai, Japan*  
**Electric field induced superconductivity with electric double layer transistors**

**11:00 - 11:30** --- Coffee Break ---

**11:25 - 12:25** --- SESSION CHAIR: Eric BAUER ---

**11:30 - 12:30** **G. BLUMBERG** / *Rutgers, The State Univ. of New Jersey, Piscataway, U.S.A.*  
**Raman spectroscopy of multiband superconductors with competing order parameters**

**12:30 - 14:30** --- Lunch Break ---

**Monday, 9 August 2010 - QUANTUM CRITICALITY** (Room:Leonardo da Vinci Building Main Lecture Hall)

**9 August 2010**

- 08:55 - 10:55 --- SESSION CHAIR: Andrey CHUBUKOV ---
- 09:00 - 10:00 **S. NAKATSUJI** / *University of Tokyo, Japan*  
**Quantum criticality and spin liquid in Kondo lattices**
- 10:00 - 11:00 **M. GARST** / *Universitaet zu Koeln, Germany*  
**Multiscale quantum criticality: Nematic instability in metals**
- 11:00 - 11:30 --- Coffee Break ---
- 11:25 - 12:25 --- SESSION CHAIR: Piers COLEMAN ---
- 11:30 - 12:30 **S. BUEHLER-PASCHEN** / *Vienna University of Technology, Austria*  
**Recent developments in heavy-fermion quantum criticality**
- 12:30 - 14:30 --- Lunch Break ---

**Monday, 9 August 2010 - UNCONVENTIONAL SUPERCONDUCTORS** (Room:Leonardo da Vinci Building Main Lecture Hall)

9 August 2010

- 14:25 - 16:25 --- SESSION CHAIR: Andrew MacKENZIE ---
- 14:30 - 15:30 **A. KAPITULNIK** / *Stanford University, U.S.A.*  
**Time reversal symmetry breaking effects in unconventional superconductors**
- 15:30 - 16:00 --- Coffee Break ---
- 16:00 - 17:00 **H. TAKAGI** / *University of Tokyo, Japan*  
**New superconducting transition metal pnictides and quasi-particle interference in Fe(Se,Te) superconductor**

**Tuesday, 10 August - RUTHENIDES, STRONG CORRELATIONS** (Room:Leonardo da Vinci Building Main Lecture Hall)

10 August 2010

- 08:55 - 10:55 --- SESSION CHAIR: Andy SCHOFIELD ---
- 09:00 - 10:00 **A.P. MacKENZIE** / *University of St. Andrews, Scotland, U.K.*  
**Thermodynamic studies of Sr<sub>3</sub>Ru<sub>2</sub>O<sub>7</sub>**
- 10:00 - 11:00 **R. FLINT** / *Rutgers, The State Univ. of New Jersey, Piscataway, U.S.A.*  
**How spins become pairs: composite pairing and magnetism in the 115 heavy fermion superconductors**
- 11:00 - 11:30 --- Coffee Break ---
- 11:25 - 12:25 --- SESSION CHAIR: Satoru NAKATSUJI ---
- 11:30 - 12:30 **M. ARONSON** / *Brookhaven National Lab., Upton, U.S.A.*  
**Quantum criticality in geometrically frustrated heavy fermion compounds**
- 12:30 - 14:30 --- Lunch Break ---

**Tuesday, 10 August 2010 - MULTIFERROICS, VANADATES (Room:Leonardo da Vinci Building Main Lecture Hall)**

**10 August 2010**

**15:30 - 16:00** --- Coffee Break ---

**15:55 - 17:55** --- SESSION CHAIR: Richard GREENE ---

**16:00 - 17:00** **Sang-Wook CHEONG** / *Rutgers State University, Piscataway, USA*  
**Multiferroic vortices**

**17:00 - 18:00** **N. PERKINS** / *University of Wisconsin-Madison, U.S.A.*  
**Spin-orbital physics in vanadates**

**Wednesday, 11 August 2010 - CUPRATES (Room:Leonardo da Vinci Building Main Lecture Hall)**

**11 August 2010**

**08:25 - 10:25** --- SESSION CHAIR: Sang-Wook CHEONG ---

**09:00 - 10:00** **R. GREENE** / *University of Maryland, College Park, U.S.A.*  
**Correlation between spin fluctuations and pairing in electron-doped cuprates**

**10:00 - 11:00** **B. KEIMER** / *MPI, Stuttgart, Germany*  
**Neutron studies of the cuprates**

**11:00 - 11:30** --- Coffee Break ---

**11:25 - 12:25** --- SESSION CHAIR: Meigan ARONSON ---

**11:30 - 12:30** **A. KAMINSKI** / *Iowa State University, Ames, U.S.A.*  
**Competing ground states in cuprates: disentangling Cooper-pair formation above  $T_c$  from the pseudogap state**

**12:30 - 14:30** --- Lunch break ---

**Wednesday, 11 August 2010 - Session to be determined (Room:Leonardo da Vinci Building Main Lecture Hall)**

**11 August 2010**

**14:25 - 15:25** --- SESSION CHAIR: Tetsuo HANAGURI ---

**14:30 - 15:30** **S. SHIN** / *The University of Tokyo, Japan*  
**Laser-ARPES study on Fe-pnictides superconductors**

**15:25 - 17:25** --- SESSION CHAIR: Piers COLEMAN ---

**15:30 - 17:30** **POSTER SESSION - Poster Gallery (behind the Main Lecture Hall)**  
Refreshments will be available during the Poster Session

**Thursday, 12 August 2010 - PNICTIDES (Room:Leonardo da Vinci Building Main Lecture Hall)**

**12 August 2010**

- 08:55 - 10:55 --- SESSION CHAIR: Laura GREENE ---
- 09:00 - 10:00 **B. BUECHNER** / *Leibniz Inst. for Solid State & Materials Research, Dresden, Germany*  
**Nanoscale electronic order in underdoped iron pnictides**
- 10:00 - 11:00 **P. CANFIELD** / *Iowa State University, Ames, U.S.A.*  
**Fe-pnictides**
- 11:00 - 11:30 --- Coffee Break ---
- 11:25 - 12:25 --- SESSION CHAIR: Adam KAMINSKI ---
- 11:30 - 12:30 **L. GREENE** / *University of Illinois at Urbana-Champaign, U.S.A.*  
**Point contact spectroscopy of strongly-correlated electron materials: Andreev reflection multiband superconductivity and magnetism. The search for innovative avenues towards developing new families of superconducting materials**
- 12:30 - 14:30 --- Lunch Break ---

**Thursday, 12 August 2010 - SPIN LIQUIDS/FRUSTRATED MAGNETISM** (Room:Leonardo da Vinci Building Main Lecture Hall)

12 August 2010

- 14:25 - 16:25 --- SESSION CHAIR: Silke BUEHLER-PASCHEN ---
- 14:30 - 15:30 **Y. MATSUDA** / *Kyoto University, Japan*  
**Bipartite elementary excitations in a two-dimensional quantum spin liquid**
- 15:30 - 16:00 --- Coffee Break ---
- 16:00 - 17:00 **A. FURUSAKI** / *RIKEN Advanced Science institute, Saitama, Japan*  
**Unconventional ordered phases in frustrated ferromagnetic spin chains**

**Friday, 13 August 2010 - Pnictides / Topological Insulators** (Room:Leonardo da Vinci Building Main Lecture Hall)

13 August 2010

- 08:55 - 10:55 --- SESSION CHAIR: Paul CANFIELD ---
- 09:00 - 10:00 **P. PAGLIUSO** / *State University of Campinas "Gleb Wataghin", Brazil*  
**Low symmetry structures and strong f-s(d-s) hybridization as key ingredients to find new unconventional superconductors**
- 10:00 - 11:00 **T. HANAGURI** / *RIKEN Advanced Science Institute, Saitama, Japan*  
**Landau-level spectroscopy of helical Dirac fermions in a topological insulator Bi<sub>2</sub>Se<sub>3</sub>**
- 11:00 - 11:30 --- Coffee Break ---
- 11:30 - 12:30 **Discussion and Closing Remarks**  
**P. COLEMAN, A. CHUBUKOV, A. SCHOFIELD, H. TAKAGI and E.TOSATTI**



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Activity SMR: **2157**

# Workshop on Principles and Design of Strongly Correlated Electronic Systems

2 August 2010 - 13 August 2010  
Trieste - ITALY

Institute for Complex Adaptive Matter (ICAM-I2CAM)  
Interdisciplinary Approaches to Functional Electronic and Biological Materials  
(INTEL-BIOMAT) funded by the European Science Foundation (ESF)  
RIKEN Advanced Science Institute

**Total Number of Visitors: 113**

## **Preliminary List of Participants**

No.	NAME and INSTITUTE	Nationality	Function
<b>DIRECTOR</b>		<b>Total number in this function: 5</b>	
1.	<b>CHUBUKOV Andrey Vadimovich</b> Research Field :  Research Topic :  Permanent Institute: University of Wisconsin-Madison Department of Physics 1150 University Avenue Madison WI 53706-1390 UNITED STATES OF AMERICA Permanent Institute e mail chubukov@physics.wisc.edu	UNITED STATES OF AMERICA	<b>DIRECTOR</b>
2.	<b>COLEMAN Piers</b> Research Field :  Research Topic :  Permanent Institute: Rutgers State University Serin Physics Laboratory Dept of Physics and Astronomy 136 Frelinghuysen Road NJ 08854-8019 Piscataway UNITED STATES OF AMERICA Permanent Institute e mail coleman@physics.rutgers.edu	UNITED KINGDOM	<b>DIRECTOR</b>
3.	<b>SCHOFIELD Andrew John</b> Research Field :  Research Topic :  Permanent Institute: University of Birmingham School of Physics & Astronomy Theoretical Physics Res.Group Edgbaston B15 2TT Birmingham UNITED KINGDOM Permanent Institute e mail ajs@th.ph.bham.ac.uk	UNITED KINGDOM	<b>DIRECTOR</b>

No.	NAME and INSTITUTE	Nationality	Function
4.	<p><b>TAKAGI Hidenori</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>University of Tokyo  Graduate School of Frontier Sciences  Dept. Advanced Material Sciences  Kibanto 403  Kashiwa-no-ha 5-1-5  277-8561 Kashiwa  Chiba  JAPAN</p> <p>Permanent Institute e mail   htakagi@k.u-tokyo.ac.jp,  h-takagi@riken.jp</p>	JAPAN	<b>DIRECTOR</b>
5.	<p><b>TOSATTI Erio</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>S.I.S.S.A. International School for Advanced Studies  Condensed Matter Section  Via Bonomea 265  34136 Trieste  ITALY</p> <p>Permanent Institute e mail   tosatti@sissa.it</p>	ITALY	<b>LOCAL ORGANIZER</b>



No.	NAME and INSTITUTE	Nationality	Function
<b>CONFERENCE SPEAKER</b>		<b>Total number in this function: 37</b>	
6.	<b>ALLOUL Henri</b> Research Field :  Research Topic :  Permanent Institute: Université de Paris XI (Paris-Sud) Laboratoire de Physique des Solides Batiment 510 Centre Universitaire F-91405 Orsay Cedex FRANCE Permanent Institute e mail alloul@lps.u-psud.fr	FRANCE	<b>CONFERENCE SPEAKER</b>
7.	<b>AOKI Dai</b> Research Field :  Research Topic :  Permanent Institute: C.E.A. Grenoble SPSMS Service of Statistical Physics, Magnetism and Superconductivity INAC Bat.C1 17 Rue des Martyrs 38054 Grenoble FRANCE Permanent Institute e mail aokidai@gmail.com, dai.aoki@cea.fr	JAPAN	<b>CONFERENCE SPEAKER</b>
8.	<b>ARONSON Meigan</b> Research Field :  Research Topic :  Permanent Institute: Physics Department Brookhaven National Laboratory Building 400C NY 11973 Upton UNITED STATES OF AMERICA Permanent Institute e mail maronson@bnl.gov	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
9.	<p><b>BAUER Eric</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>Los Alamos National Laboratory  P.O. Box 1663  MS K764  NM 87545 Los Alamos  UNITED STATES OF AMERICA  Permanent Institute e mail ebauer@lanl.gov</p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
10.	<p><b>BENFATTO Lara</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>ISC CNR  Department of Physics  University of Rome La Sapienza  Piazzale Aldo Moro 5  Roma 00185  Italia  ITALY  Permanent Institute e mail lara.benfatto@roma1.infn.it</p>	ITALY	<b>CONFERENCE SPEAKER</b>
11.	<p><b>BUECHNER Bernd</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>Leibniz Institute For Solid State and Material Research  Institute of Solid State Research  Helmholtzstr. 20  D-01169 Dresden  GERMANY  Permanent Institute e mail b.buechner@ifw-dresden.de</p>	GERMANY	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
12.	<b>BUEHLER-PASCHEN Silke</b> Research Field :  Research Topic :  Permanent Institute: Institute of Solid State Physics Vienna University of Technology Wiedner Hauptstrasse 8-10 1040 Vienna AUSTRIA Permanent Institute e mail paschen@ifp.tuwien.ac.at, silke.buehler-paschen@tuwien.ac.at	AUSTRIA	<b>CONFERENCE SPEAKER</b>
13.	<b>BURCH Kenneth Stephen</b> Research Field :  Research Topic :  Permanent Institute: Institute for Optical Sciences University of Toronto 60 St. George Street Suite 331 ON Toronto M5S 1A7 CANADA Permanent Institute e mail kburch@physics.utoronto.ca	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
14.	<b>CANFIELD Paul</b> Research Field :  Research Topic :  Permanent Institute: Department of Physics & Astronomy Iowa State University Division of Material Science & Engineering Ames Laboratory 1600 S. 16th St. IA Ames 50011-1250 UNITED STATES OF AMERICA Permanent Institute e mail canfield@ameslab.gov	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
15.	<p><b>CAPONE Massimo</b>            Research Field : <b>STRONGLY CORRELATED FERMIONS</b>             Research Topic : <b>SUPERCONDUCTIVITY IN CORRELATED SYSTEMS</b>             Permanent Institute:            Universita' di Roma 'La Sapienza'            I.N.F.M. - Unita' di Roma 1            Dip.To di Fisica 'E.Fermi'            Piazzale Aldo Moro 2            00185 Roma            ITALY            Permanent Institute e mail <a href="mailto:massimo.capone@roma1.infn.it">massimo.capone@roma1.infn.it</a></p>	ITALY	<b>CONFERENCE SPEAKER</b>
16.	<p><b>CHEONG Sang-Wook</b>            Research Field :             Research Topic :             Permanent Institute:            Rutgers State University            Dept.of Physics and Astronomy            136 Frelinghuysen Road            NJ 08854-8019 Piscataway            UNITED STATES OF AMERICA            Permanent Institute e mail <a href="mailto:sangc@physics.rutgers.edu">sangc@physics.rutgers.edu</a></p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
17.	<p><b>EREMIN Ilya</b>            Research Field :             Research Topic :             Permanent Institute:            Ruhr University Bochum            Faculty of Physics &amp; Astronomy            Universitaetsstrasse 150            D-44780 Bochum            GERMANY            Permanent Institute e mail <a href="mailto:ieremin@tp3.rub.de">ieremin@tp3.rub.de</a></p>	RUSSIAN FEDERATION	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
18.	<p><b>FLINT Rebecca</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Rutgers, the State University of New Jersey            Department of Physics and Astronomy            136 Frelinghuysen Road            Piscataway NJ 08854-8019            UNITED STATES OF AMERICA            Permanent Institute e mail flint@physics.rutgers.edu</p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
19.	<p><b>FURUSAKI Akira</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            The Institute of Physical and Chemical Research            (RIKEN)            Condensed Matter Theory Laboratory            2-1 Hirosawa            Wako-Shi            351-0198 Saitama            JAPAN            Permanent Institute e mail furusaki@riken.jp</p>	JAPAN	<b>CONFERENCE SPEAKER</b>
20.	<p><b>GARST Markus</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Universitaet zu Koeln            Institut fuer Theoretische Physik            Zuelpicher Str. 77            Koeln 50937            GERMANY            Permanent Institute e mail mgarst@uni-koeln.de</p>	GERMANY	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
21.	<p><b>GREENE Laura</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            University of Illinois at Urbana Champaign            Department of Physics            Center for Advanced Study            1110 West Green Street            Urbana IL 61801-3080            UNITED STATES OF AMERICA            Permanent Institute e mail lhgreene@illinois.edu</p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
22.	<p><b>GREENE Richard</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            University of Maryland            Dept. of Physics &amp; Astronomy            MD 20742-4111 College Park            UNITED STATES OF AMERICA            Permanent Institute e mail rgreene@squid.umd.edu</p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
23.	<p><b>GRIN Juri</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Max-Planck-Institut Fuer Chemische Physik            Fester Stoffe (Chemical Physics of Solids)            Nothnitzer Strasse 40            01187 Dresden            GERMANY            Permanent Institute e mail grin@cpfs.mpg.de</p>	GERMANY	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
24.	<b>HANAGURI Tetsuo</b> Research Field : <b>EXPERIMENTAL CONDENSED MATTER PHYSICS</b>  Research Topic : <b>SUPERCONDUCTIVITY, STM/STS, TOPOLOGICAL INSULATORS</b>  Permanent Institute: Magnetic Materials Laboratory RIKEN Advanced Science Institute 2-1 Hirosawa Wako 351-0198 Saitama JAPAN Permanent Institute e mail hanaguri@riken.jp	JAPAN	<b>CONFERENCE SPEAKER</b>
25.	<b>HASAN Mohammad Zahid</b> Research Field :  Research Topic :  Permanent Institute: Princeton University Department of Physics Jadwin Hall Princeton NJ 08544 UNITED STATES OF AMERICA Permanent Institute e mail mzhasan@princeton.edu	BANGLADESH	<b>CONFERENCE SPEAKER</b>
26.	<b>HIRSCHFELD Peter Joseph</b> Research Field :  Research Topic :  Permanent Institute: University of Florida Department of Physics P.O. Box 118440 32611-8440 FL Gainesville UNITED STATES OF AMERICA Permanent Institute e mail pjh@phys.ufl.edu	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
27.	<p><b>ISHIDA Kenji</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>Kyoto University  Graduate School of Science  Department of Physics  Kitashirakawa-Oiwakecho  Sakyo-Ku  606-8502 Kyoto  JAPAN  Permanent Institute e mail kishida@scphys.kyoto-u.ac.jp</p>	JAPAN	<b>CONFERENCE SPEAKER</b>
28.	<p><b>IWASA Yoshihiro</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>International Collaboration Center ICC  Institute for Materials Research IMR  Tohoku University  980 8577 Sendai  JAPAN  Permanent Institute e mail iwasa@imr.tohoku.ac.jp</p>	JAPAN	<b>CONFERENCE SPEAKER</b>
29.	<p><b>KAMINSKI Adam</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>Ames Laboratory  Department of Physics and Astronomy  Iowa State University  Zaffarano Hall  Ames IA 50011  UNITED STATES OF AMERICA  Permanent Institute e mail kaminski@ameslab.gov</p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>



No.	NAME and INSTITUTE	Nationality	Function
30.	<p><b>KAPITULNIK Aharon</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Stanford University            Department of Applied Physics            Via Pueblo Mall            CA 94305-4090 Stanford            UNITED STATES OF AMERICA            Permanent Institute e mail aharonk@stanford.edu</p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
31.	<p><b>KEIMER Bernhard</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Max Planck Institute MPI            for Solid State Research            Heisenbergstrasse 1            D-70569 Stuttgart            GERMANY            Permanent Institute e mail b.keimer@fkf.mpg.de</p>	GERMANY	<b>CONFERENCE SPEAKER</b>
32.	<p><b>MACKENZIE Andrew Peter</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            University of St. Andrews            School of Physics and Astronomy            North Haugh, Fife            St Andrews KY16 9SS            UNITED KINGDOM            Permanent Institute e mail apm9@st-andrews.ac.uk</p>	UNITED KINGDOM	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
33.	<p><b>MATSUDA Yuji</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Department of Physics            Kyoto University            Kitashirakawa            Sakyo            Kyoto 606-8502            JAPAN            Permanent Institute e mail ym@issp.u-tokyo.ac.jp</p>	JAPAN	<b>CONFERENCE SPEAKER</b>
34.	<p><b>NAKATSUJI Satoru</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Kyoto University            Graduate School of Science            Department of Physics            Kitashirakawa-Oiwakecho            Sakyo-Ku            606-8502 Kyoto            JAPAN            Permanent Institute e mail nakatsuji@scphys.kyoto-u.ac.jp</p>	JAPAN	<b>CONFERENCE SPEAKER</b>
35.	<p><b>PAGLIUSO Pascoal</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Group of Optical &amp; Magnetic Properties of Solids            Department of Quantum Electronics            Gleb Wataghin Physics Institute            State University of Campinas            UNICAMP            Campinas SP            BRAZIL            Permanent Institute e mail pagliuso@ifi.unicamp.br</p>	BRAZIL	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
36.	<b>SEAMUS DAVIS James C.</b> Research Field :  Research Topic :   Permanent Institute: Cornell University Department of Physics 622 Clark Hall Ithaca NY 14853 UNITED STATES OF AMERICA Permanent Institute e mail jcdavis@ccmr.cornell.edu	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
37.	<b>SEBASTIAN Suchitra Esther</b> Research Field :  Research Topic :   Permanent Institute: University of Cambridge Trinity College Blue Boar Court Cambridge CB2 1TQ UNITED KINGDOM Permanent Institute e mail ses59@cam.ac.uk	INDIA	<b>CONFERENCE SPEAKER</b>
38.	<b>SHIN Shik</b> Research Field :  Research Topic :   Permanent Institute: Institute of Solid State Physics The University of Tokyo 5-1-5 Kashiwanoha Kashiwa-shi Chiba 277 8581 JAPAN Permanent Institute e mail shin@issp.u-tokyo.ac.jp	REPUBLIC OF KOREA	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
39.	<p><b>TESANOVIC Zlatko B.</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Johns Hopkins University            Dept. of Physics &amp; Astronomy            3400 North Charles Street            MD 21218-2695 Baltimore            UNITED STATES OF AMERICA            Permanent Institute e mail zbt@pha.jhu.edu</p>	UNITED STATES OF AMERICA	<b>CONFERENCE SPEAKER</b>
40.	<p><b>VOJTA Matthias</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Universitat zu Koln            Institut fur Theoretische Physik            Zulpicher Strasse 77            D-50937 Cologne            GERMANY            Permanent Institute e mail vojta@thp.uni-koeln.de</p>	GERMANY	<b>CONFERENCE SPEAKER</b>
41.	<p><b>WIRTH Steffen</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Max Planck Institute            for Chemical Physics of Solids            Noethnitzer Str. 40            D-01187 Dresden            GERMANY            Permanent Institute e mail wirth@cpfs.mpg.de</p>	GERMANY	<b>CONFERENCE SPEAKER</b>

No.	NAME and INSTITUTE	Nationality	Function
42.	<b>YU Lu</b>	PEOPLE'S REPUBLIC OF CHINA	<b>CONFERENCE SPEAKER</b>
	Research Field :		
	Research Topic :		
	Permanent Institute:		
	Chinese Academy of Sciences		
	Institute of Physics		
	P.O. Box 603		
	Zhong Guan Cun Nan San Jie, 8		
	100190 Beijing		
	PEOPLE'S REPUBLIC OF CHINA		
	Permanent Institute e mail lyu@aphy.iphy.ac.cn		

No.	NAME and INSTITUTE	Nationality	Function
<b>PARTICIPANT</b>		<b>Total number in this function: 71</b>	
43.	<b>ABAH Obinna Cosmas</b> Research Field : <b>CONDENSED MATTER PHYSICS</b>  Research Topic : <b>HIGH TC SUPERCONDUCTORS, NANOTHERMODYNAMICS</b>  Permanent Institute: Department of Physics and Astronomy Faculty of Physical Sciences University of Nigeria Carver Building Nsukka Enugu NIGERIA Permanent Institute e mail abahobinna@gmail.com	NIGERIA	<b>PARTICIPANT</b>          Present Institute: Department of Nanoscience Delft University of Technology Lorentzweg Delft NETHERLANDS ANTILLES Present Institute e-mail: obinna@student.chalmers.se Until: <b>31 August 2010</b>
44.	<b>ADRIANO Cris</b> Research Field : <b>SCES, INTERMETALLIC COMPOUNDS</b>  Research Topic : <b>HEAVY FERMIONS, CE2MIN8, FE-AS SUPERCONDUCTORS</b>  Permanent Institute: Universidade Estadual de Campinas Instituto de Fisica Gleb Wataghin DEQ GPOMS Cidade Universitária Zeferino Vaz Campinas 13084-970, CP: 6165 Sao Paulo BRAZIL Permanent Institute e mail cadriano@ifi.unicamp.br	BRAZIL	<b>PARTICIPANT</b>
45.	<b>AHLAL Mohamed</b> Research Field : <b>PHYSICS OF MATERIALS AND NANOSTRUCTURES</b>  Research Topic : <b>SILICON CARBIDE NANOSTRUCTURES</b>  Permanent Institute: Laboratory of Physical State Faculty of Sciences Dhar El-Mahraz Sidi Mohamed Ben Abdellah University B.P. 1796 Atlas 30000 Fez MOROCCO Permanent Institute e mail ahlal_med@yahoo.fr	MOROCCO	<b>AFFILIATE</b>

No.	NAME and INSTITUTE	Nationality	Function
46.	<b>AKIN-OJO Omololu</b> Research Field :  Research Topic :  Permanent Institute: Boston University Department of Chemistry 590 Commonwealth Ave. Ma 02215 Boston UNITED STATES OF AMERICA Permanent Institute e mail prayerz@physics.udel.edu	NIGERIA	<b>PARTICIPANT</b>
		Present Institute: The Abdus Salam International Centre for Theoretical Physics Condensed Matter and Statistical Physics Section Strada Costiera 11 34151 Trieste ITALY	
		Until: <b>31 August 2011</b>	
47.	<b>AL-KHAWAJA Sameer</b> Research Field :  Research Topic :  Permanent Institute: Atomic Energy Commission of Syria P.O. Box 6091 Damascus SYRIAN ARAB REPUBLIC Permanent Institute e mail SKHAWAJA@AEC.ORG.SY	SYRIAN ARAB REPUBLIC	<b>AFFILIATE</b>
48.	<b>ASSIS GARCIA Fernando</b> Research Field : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>SKUTTERUDITES, CRYSTALL FIELDS, RATTLING MODE</b>  Permanent Institute: Universidade Estadual de Campinas Instituto de Fisica Gleb Wataghin Departamento de Eletronica Quantica Cidade Universit�ria Zeferino Vaz Campinas 6165 Sao Paulo BRAZIL Permanent Institute e mail fgarcia@ifi.unicamp.br	BRAZIL	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
49.	<b>BALDEA Ioan</b> Research Field :  Research Topic :  Permanent Institute: Universität Heidelberg Theoretische Chemie Physikalisch-Chemisches Institut Im Neuenheimer Feld 229 D-69120 Heidelberg GERMANY Permanent Institute e mail ioan.baldea@pci.uni-heidelberg.de	GERMANY	<b>PARTICIPANT</b>
50.	<b>BAUER Johannes</b> Research Field : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>COULOMB REPULSION</b>  Permanent Institute: Max Planck Institute for Solid State Research Heisenbergstrasse 1 70569 Stuttgart GERMANY Permanent Institute e mail j.bauer@fkf.mpg.de	GERMANY	<b>PARTICIPANT</b>
51.	<b>BERRIDGE Andrew McConnell</b> Research Field : <b>STRONGLY CORRELATED ELECTRONIC SYSTEMS</b>  Research Topic : <b>NOVEL PHASE FORMATION, ELECTRON NEMATICS, SR3RU2O7</b>  Permanent Institute: School of Physics and Astronomy University of Birmingham Edgbaston Birmingham B15 2TT UNITED KINGDOM Permanent Institute e mail a.berridge@bham.ac.uk	UNITED KINGDOM	<b>PARTICIPANT</b>



No.	NAME and INSTITUTE	Nationality	Function
52.	<b>BLUMBERG Girsh</b> Research Field : <b>CONDENSED MATTER AND MATERIALS SCIENCE</b>  Research Topic : <b>SPECTROSCOPY, SUPERCONDUCTIVITY, QUANTUM MAGNETISM</b>  Permanent Institute: Rutgers, The State University of New Jersey Dept of Physics and Astronomy 136 Frelinghuysen Road Piscataway NJ 08854-8019 UNITED STATES OF AMERICA Permanent Institute e mail girsh@physics.rutgers.edu	UNITED STATES OF AMERICA	<b>PARTICIPANT</b>
53.	<b>BRIFFA Amy</b> Research Field : <b>THEORY OF CONDENSED MATTER</b>  Research Topic : <b>STRONGLY CORRELATED ELECTRONS,FRUSTRATED MAGNETISM</b>  Permanent Institute: Department of Theoretical Physics School of Physics and Astronomy University of Birmingham Edgbaston Birmingham B152TT UNITED KINGDOM Permanent Institute e mail briffa@theory.bham.ac.uk	UNITED KINGDOM	<b>PARTICIPANT</b>
54.	<b>CARR Sam Thomas</b> Research Field : <b>CONDENSED MATTER PHYSICS</b>  Research Topic : <b>STRONG CORRELATIONS</b>  Permanent Institute: Institute for Theory of Condensed Matter Karlsruhe Institute of Technology Physikhochhaus (Geb.Nr. 30.23, 10. OG/floor) Wolfgang-Gaede-Str. 1 76131 Karlsruhe GERMANY Permanent Institute e mail sam.carr@physics.org, samtcarr@gmail.com	UNITED KINGDOM	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
55.	<b>CHAKHMAKHCHYAN Levon</b> Research Field : <b>QUANTUM MECHANICS, STATISTICAL PHYSICS</b>  Research Topic : <b>QUANTUM PHASE TRANSITIONS, ENTANGLEMENT</b>  Permanent Institute: Yerevan State University Faculty of Physics Chair of Theoretical Physics Alex Manoogian st. 1 0025 Yerevan ARMENIA Permanent Institute e mail levonc@rambler.ru	ARMENIA	<b>PARTICIPANT</b>
56.	<b>CHESCA Boris</b> Research Field : <b>SUPERCONDUCTING AND MAGNETIC THIN FILM STRUCTURES</b>  Research Topic : <b>UNCONVENTIONAL SUPERCONDUCTIVITY, JOSEPHSON EFFECT</b>  Permanent Institute: Department of Physics Loughborough University Ashby Road Loughborough LE11 3TU Leicestershire UNITED KINGDOM Permanent Institute e mail B.Chesca@lboro.ac.uk	GERMANY	<b>PARTICIPANT</b>
57.	<b>DA SILVA Edison</b> Research Field : <b>COMPUTATIONAL MATERIALS SCIENCE</b>  Research Topic : <b>METAL NANOSTRUCTURES</b>  Permanent Institute: Universidade Estadual de Campinas (UNICAMP) Instituto de Fisica 'Gleb Wataghin' (I.F.G.W.) Cidade Universitaria Zeferino Vaz C.P. 6165 13083-970 Campinas BRAZIL Permanent Institute e mail zacarias@ifi.unicamp.br	BRAZIL	<b>SENIOR ASSOCIATE</b>

No.	NAME and INSTITUTE	Nationality	Function
58.	<b>DIKANDE Alain Moise</b> Research Field :  Research Topic :	REPUBLIC OF CAMEROON	<b>REGULAR ASSOCIATE</b>
	Permanent Institute: Department of Physics Faculty of Science University of Buea UB Street, P.O. Box 63, Molyko South West Province Buea REPUBLIC OF CAMEROON Permanent Institute e mail bithadel@yahoo.com		Present Institute e-mail: adikande@ictp.it
59.	<b>DOGRA Anjana</b> Research Field : <b>MATERIAL SCIENCE</b>  Research Topic : <b>MAGNETIC MATERIALS AND LOW TEMPERATURE PHYSICS</b>	INDIA	<b>PARTICIPANT</b>
	Permanent Institute: National Physical Laboratory Dr. K. S. Krishnan Marg New Delhi 110012 INDIA Permanent Institute e mail anjanad@nplindia.org		
60.	<b>FARKASOVSKY Pavol</b> Research Field :  Research Topic :	SLOVAK REPUBLIC	<b>PARTICIPANT</b>
	Permanent Institute: Slovak Academy of Sciences Institute of Experimental Physics Watsonova 47 04001 Kosice SLOVAK REPUBLIC Permanent Institute e mail farky@saske.sk		

No.	NAME and INSTITUTE	Nationality	Function
61.	<b>FERNANDES Rafael Monteiro</b> Research Field : <b>STRONGLY CORRELATED ELECTRONS</b>  Research Topic : <b>UNCONVENTIONAL SUPERCONDUCTORS; MAGNETISM</b>  Permanent Institute: Ames Laboratory Department of Physics and Astronomy Iowa State University Zaffarano Hall Ames IA 50011 UNITED STATES OF AMERICA Permanent Institute e mail rafaelmf@ameslab.gov	BRAZIL	<b>PARTICIPANT</b>
62.	<b>GAMZA Monika Barbara</b> Research Field : <b>PHYSICS &amp; CHEMISTRY OF STRONGLY CORRELATED SYSTEMS</b>  Research Topic : <b>SUPERCONDUCTIVITY AND MAGNETISM IN HF SYSTEMS</b>  Permanent Institute: Institute of Materials Science University of Silesia ul. Bankowa 12 40-007 Katowice POLAND Permanent Institute e mail monika.gamza@us.edu.pl	POLAND	<b>PARTICIPANT</b>
		Present Institute: Max Planck-Institute for Chemical Physics of Solids Nothnitzer Strasse 40 01187 Dresden GERMANY Present Institute e-mail: Monika.Gamza@cpfs.mpg.de Until: <b>31 December 2010</b>	
63.	<b>GORDON Ryan</b> Research Field : <b>CONDENSED MATTER PHYSICS</b>  Research Topic : <b>SUPERCONDUCTIVITY, PENETRATION DEPTH MEASUREMENTS</b>  Permanent Institute: Iowa State University Ames Laboratory 12 Physics Hall Ames IA 50011 UNITED STATES OF AMERICA Permanent Institute e mail rgordon@iastate.edu	UNITED STATES OF AMERICA	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
64.	<b>HANCOCK Jason N.</b> Research Field :  Research Topic :  Permanent Institute: University of Geneva D.P.M.C. - Departement de Physique de la Matiere Condensee 24 Quai Ernest-Ansermet CH-1211 Geneva 4 SWITZERLAND Permanent Institute e mail jason.hancock@unige.ch	UNITED STATES OF AMERICA	<b>PARTICIPANT</b>
65.	<b>HANSMANN Philipp</b> Research Field : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>HIGH TEMPERATURE SUPERCONDUCTIVITY</b>  Permanent Institute: Institute for Solid State Physics Vienna University of Technology Wiedner Hauptstrasse 8 -10 A-1040 Vienna AUSTRIA Permanent Institute e mail hansmann@ifp.tuwien.ac.at	GERMANY	<b>PARTICIPANT</b>
66.	<b>HUSAIN Shahid</b> Research Field : <b>CONDENSED MATTER PHYSICS</b>  Research Topic : <b>ELECTRON DOPED MANGANITES AND NANOMANGANITES</b>  Permanent Institute: Department of Physics Aligarh Muslim University Aligarh 202002 Uttar Pradesh INDIA Permanent Institute e mail s.husain@lycos.com	INDIA	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
67.	<p><b>IKEDA Hiroaki</b></p> <p>Research Field : <b>CONDENSED-MATTER PHYSICS</b></p> <p>Research Topic : <b>SUPERCONDUCTIVITY AND MAGNETISM</b></p> <p>Permanent Institute:            Department of Physics            Kyoto university            Kitashirakawa            Kyoto 606-8502            JAPAN            Permanent Institute e mail hiroaki@scphys.kyoto-u.ac.jp</p>	JAPAN	<b>PARTICIPANT</b>
68.	<p><b>IMURA Ken Ichiro</b></p> <p>Research Field : <b>MESOSCOPIC PHYSICS</b></p> <p>Research Topic : <b>GRAPHENE, SPINTRONICS, TOPOLOGICAL INSULATOR</b></p> <p>Permanent Institute:            Graduate School of Advanced Sciences of Matter Hiroshima            University            Kagamiyama 1 3 1            Higashi Hiroshima 739-8530            Hiroshima            JAPAN            Permanent Institute e mail imura@hiroshima-u.ac.jp</p>	JAPAN	<b>PARTICIPANT</b>
69.	<p><b>JIANG Haitao</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:            Tongji University            Pohl-Institute of Solid State Physics            Siping Road 1239            200092 Shanghai            PEOPLE'S REPUBLIC OF CHINA            Permanent Institute e mail jiang-haitao@tongji.edu.cn</p>	PEOPLE'S REPUBLIC OF CHINA	<b>AFFILIATE</b>

No.	NAME and INSTITUTE	Nationality	Function
70.	<p><b>KACHKACHI Mohamed</b>            Research Field : <b>CONFORMAL GEOMETRY</b>             Research Topic : <b>QUASICONFORMAL MAPPING IN 2D-DIMENSIONAL CONFORMAL</b>             Permanent Institute:            Universite Hassan I            Faculte des Sciences Et Techniques            Dept. de Mathematiques &amp; Informatique            B.P. 577            Route de Casablanca            Settat            MOROCCO            Permanent Institute e mail mkachkachi@gmail.com</p>	MOROCCO	<b>PARTICIPANT</b>
71.	<p><b>KACZMARCZYK Jan</b>            Research Field : <b>SUPERCONDUCTIVITY, STRONGLY CORRELATED ELECTRONS</b>             Research Topic : <b>FFLO PHASE IN CORRELATED ELECTRON SYSTEMS</b>             Permanent Institute:            Jagiellonian University            Marian Smoluchowski Institute of Physics            C.M. Theory &amp; Nanophysics Dept.            Reymonta 4            30-059 Krakow            POLAND            Permanent Institute e mail kaczek@gmail.com</p>	POLAND	<b>PARTICIPANT</b>
72.	<p><b>KARIM Driss</b>            Research Field :             Research Topic :             Permanent Institute:            Department of Exact Sciences            Faculty of Nador            University Mohamed First            P.O. Box 300            62700 Nador            MOROCCO            Permanent Institute e mail ikarim@ucam.ac.ma</p>	MOROCCO	<b>JUNIOR ASSOCIATE</b>

No.	NAME and INSTITUTE	Nationality	Function
73.	<p><b>KARNAUKHOV Igor Nikolaevich</b>            Research Field : <b>CONDENSED MATTER</b>             Research Topic : <b>STRONGLY CORRELATED SYSTEMS</b></p> <p>Permanent Institute:            Institute of Metal Physics            National Academy of Sciences            Department of theory of nonideal crystals            Vernadsky Street 36            Kiev 03142            UKRAINE            Permanent Institute e mail karnaui@yahoo.com</p>	UKRAINE	<b>PARTICIPANT</b>
74.	<p><b>KHARE Amit Kumar</b>            Research Field : <b>CONDENSED MATTER PHYSICS</b>             Research Topic : <b>OXIDE MATERIALS</b></p> <p>Permanent Institute:            Department of Physics            Barkatullah University</p> <p>HOSHANGABAD ROAD            Bhopal 462026            MADHYA PRADESH            INDIA            Permanent Institute e mail khareamit21@gmail.com</p>	INDIA	<b>PARTICIPANT</b>
75.	<p><b>KHOSROABADI Hossein</b>            Research Field :             Research Topic :</p> <p>Permanent Institute:            Sharif University of Technology            Department of Physics            P.O. Box 11155-9161            Azadi Ave.            Tehran 14588-8949            ISLAMIC REPUBLIC OF IRAN            Permanent Institute e mail Hkhosro56@yahoo.com</p>	ISLAMIC REPUBLIC OF IRAN	<b>JUNIOR ASSOCIATE</b>

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No.	NAME and INSTITUTE	Nationality	Function
76.	<p><b>KIM Hyunsoo</b>            Research Field : <b>CONDENSED MATTER PHYSICS</b>             Research Topic : <b>UNCONVENTIONAL AND NOVEL SUPERCONDUCTORS</b>             Permanent Institute:            Ames Laboratory            Iowa State University            A117 Zaffarano            Ames IA 50011            UNITED STATES OF AMERICA            Permanent Institute e mail hkim@ameslab.gov</p>	REPUBLIC OF KOREA	<b>PARTICIPANT</b>
77.	<p><b>KNEZEVIC Andrea</b>            Research Field : <b>SOLID STATE PHYSICS</b>             Research Topic : <b>MAGNETISM OF INTERMETALLIC COMPOUNDS</b>             Permanent Institute:            Rudjer Boskovic Institute            Department of Physics            Bijenicka C.54            10000 Zagreb            CROATIA            Permanent Institute e mail aknezevic@irb.hr</p>	CROATIA	<b>PARTICIPANT</b>
78.	<p><b>KOGAN Eugene</b>            Research Field : <b>MAGNETISM AND LOCALIZATION THEORY</b>             Research Topic : <b>DOUBLE EXCHANGE</b>             Permanent Institute:            Bar-Ilan University            Department of Physics            52900 Ramat Gan            ISRAEL            Permanent Institute e mail kogon@mail.biu.ac.il</p>	ISRAEL	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
79.	<p><b>KOROVUSHKIN Maxim</b>            Research Field : <b>THEORY OF THE STRONGLY CORRELATED ELECTRON SYSTEMS</b>            Research Topic : <b>INTERSITE COULOMB INTERACTION, SPIN POLARONS</b></p> <p>Permanent Institute:            Theoretical Physics Laboratory            L.V. Kirensky Institute of Physics Siberian Branch of Russian            Academy of Sciences            Akademgorodok 50/38            660036 Krasnoyarsk            RUSSIAN FEDERATION            Permanent Institute e mail maxim.korovushkin@gmail.com</p>	RUSSIAN FEDERATION	<b>PARTICIPANT</b>
80.	<p><b>M'PASSI-MABIALA Bernard</b>            Research Field :            Research Topic :</p> <p>Permanent Institute:            Universite Marien Ngouabi            Faculte des Sciences            Departement de Physique            B.P. 69            Brazzaville            PEOPLE'S REPUBLIC OF CONGO            Permanent Institute e mail mpassi_b@yahoo.com</p>	PEOPLE'S REPUBLIC OF CONGO	<b>SENIOR ASSOCIATE</b>
81.	<p><b>MAJI Bibekananda</b>            Research Field : <b>EXPERIMENTAL CONDENSED MATTER PHYSICS</b>            Research Topic : <b>MAGNETISM IN NOVEL MATERIALS</b></p> <p>Permanent Institute:            Indian Institute of Technology            Powai            Mumbai 400076            Maharashtra            INDIA            Permanent Institute e mail bibekanandamaji@gmail.com</p>	INDIA	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
82.	<b>MARDAANI Mohammad</b> Research Field : <b>QUANTUM CONDUCTANCE, SPINTRONIC, NANOTHERMODYNAMIC</b>  Research Topic : <b>ELECTRON AND PHONON AND E-E INTRAC. IN NANOWIRE</b>  Permanent Institute: Physics Group Shahrekord University 115 Shahrekord Charmahal ISLAMIC REPUBLIC OF IRAN Permanent Institute e mail moh.mardaani@gmail.com	ISLAMIC REPUBLIC OF IRAN	<b>PARTICIPANT</b>
83.	<b>MASTROGIUSEPPE Diego Martin</b> Research Field : <b>CONDENSED MATTER, STRONGLY CORRELATED SYSTEMS</b>  Research Topic : <b>LOW-DIMENSIONAL SYSTEMS, SPIN-PHONON COUPLING</b>  Permanent Institute: Instituto de Fisica de Rosario Bv. 27 de Febrero 210 bis 2000 Rosario Santa Fe ARGENTINA Permanent Institute e mail mastrogiuseppe@ifir-conicet.gov.ar	ARGENTINA	<b>PARTICIPANT</b>
84.	<b>MOHAMMADZADEH Hossein</b> Research Field :  Research Topic :  Permanent Institute: Isfahan University of Technology IUT Department of Physics 84156-83111 Isfahan ISLAMIC REPUBLIC OF IRAN Permanent Institute e mail h.mohammadzadeh@ph.iut.ac.ir	ISLAMIC REPUBLIC OF IRAN	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
85.	<b>MOLLA Shimelis Admassie</b> Research Field :  Research Topic :  Permanent Institute: Addis Ababa University Faculty of Science Department of Chemistry Miazia 27 Square PO Box 1176 Addis Ababa ETHIOPIA Permanent Institute e mail shimadm@chem.aau.edu.et	ETHIOPIA	<b>SENIOR ASSOCIATE</b>
86.	<b>MONDAINI Rubem</b> Research Field : <b>STRONGLY CORRELATED ELECTRONIC SYSTEMS</b>  Research Topic : <b>GRAPHENE, MAGNETIC MULTILAYERS</b>  Permanent Institute: Universidade Federal do Rio de Janeiro Instituto de Fisica Departamento de Fisica dos Solidos Athos da Silveira Ramos nn Rio De Janeiro BRAZIL Permanent Institute e mail rmondaini@if.ufrj.br	BRAZIL	<b>PARTICIPANT</b>
87.	<b>MORR Dirk K.</b> Research Field : <b>CONDENSED MATTER PHYSICS</b>  Research Topic : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Permanent Institute: Department of Physics University of Illinois at Chicago 845 W Taylor Street mc 273 Chicago IL 60607 UNITED STATES OF AMERICA Permanent Institute e mail dkmorr@uic.edu	GERMANY	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
88.	<b>MOSADEQ Hamid</b> Research Field :  Research Topic :  Permanent Institute: Isfahan University of Technology IUT Department of Physics 84156-83111 Isfahan ISLAMIC REPUBLIC OF IRAN Permanent Institute e mail h-mosadeq@ph.iut.ac.ir	ISLAMIC REPUBLIC OF IRAN	<b>PARTICIPANT</b>
89.	<b>MUNOZ FREGOSO Benjamin</b> Research Field : <b>QUANTUM LIQUID CRYSTAL PHASES</b>  Research Topic : <b>NEMATIC AND STRIPE PHASES</b>  Permanent Institute: University of Illinois at Urbana Champaign 1110 W Green st Urbana IL 61801 UNITED STATES OF AMERICA Permanent Institute e mail bmunozf2@illinois.edu	MEXICO	<b>PARTICIPANT</b>
90.	<b>NEVIDOMSKYY Andriy</b> Research Field : <b>THEORY OF STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>HEAVY FERMION MATERIALS, IRON Pnictides</b>  Permanent Institute: Center for Materials Theory Rutgers University 136 Frelinghuysen Road Piscataway NJ 08854 UNITED STATES OF AMERICA Permanent Institute e mail andriy@physics.rutgers.edu	UKRAINE	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
91.	<p><b>NGOMA KOUMBA BERTRAN SEDAR Bertran Sedar</b></p> <p>Research Field :</p> <p>Research Topic :</p> <p>Permanent Institute:</p> <p>Universite Marien Ngouabi            Faculte Des Sciences            Departement de Mathematiques            B.P. 69            Brazzaville            PEOPLE'S REPUBLIC OF CONGO            Permanent Institute e mail rectorat@univ-mngb.net</p>	PEOPLE'S REPUBLIC OF CONGO	<b>PARTICIPANT</b>
			Present Institute e-mail: bngoma@ictp.it
92.	<p><b>NILKAMJON Tunyanop</b></p> <p>Research Field : <b>SOLID STATE PHYSIC</b></p> <p>Research Topic : <b>SUPERCONDUCTOR</b></p> <p>Permanent Institute:</p> <p>Department of Physics            Faculty of Science            Srinakharinwirot University            Sukumvit 23            10110 Bangkok            THAILAND            Permanent Institute e mail swu009@hotmail.com</p>	THAILAND	<b>PARTICIPANT</b>
93.	<p><b>OHANYAN Vadim</b></p> <p>Research Field : <b>THEORY OF MAGNETISM, INTEGRABLE SYSTEMS</b></p> <p>Research Topic : <b>MAGNETIZATION PLATEAUS, EXACT SOLUTIONS</b></p> <p>Permanent Institute:</p> <p>Department of Theoretical Physics            Yerevan State University            Al. Manoogian 1            0025 Yerevan            ARMENIA            Permanent Institute e mail ohanyan@yerphi.am</p>	ARMENIA	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
94.	<b>PERKINS Natalia</b> Research Field : <b>CONDENSED MATTER THEORY</b>  Research Topic : <b>FRUSTRATED MAGNETISM, ORBITAL PHYSICS</b>	RUSSIAN FEDERATION	<b>PARTICIPANT</b>
	Permanent Institute: Physics Department University of Wisconsin Madison 1150 University Avenue Madison Madison WI 53706-1390 UNITED STATES OF AMERICA Permanent Institute e mail perkins@physics.wisc.edu		
95.	<b>RAMIRES NEVES DE OLIVEIRA Aline</b> Research Field : <b>STRONG CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>UNCONVENTIONAL SUPERCONDUCTIVITY</b>	BRAZIL	<b>PARTICIPANT</b>
	Permanent Institute: Centro Brasileiro de Pesquisas Fisicas Rua Dr. Xavier Sigaud, 150 Rio De Janeiro 22290-180 BRAZIL Permanent Institute e mail aliner@cbpf.br		
96.	<b>REYES LOPEZ Daniel Lorenzo</b> Research Field : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>BOSE EINSTEIN CONDENSATION, HEAVY FERMIONS</b>	PERU	<b>PARTICIPANT</b>
	Permanent Institute: International Institute of Physics Universidade Federal do Rio Grande do Norte Campus Lagoa Nova Natal 59.072-970 Rio Grande do Norte BRAZIL Permanent Institute e mail daniel@cbpf.br		

No.	NAME and INSTITUTE	Nationality	Function
97.	<b>RULLIER-ALBENQUE Florence</b> Research Field : <b>HALL EFFECT</b>  Research Topic :  Permanent Institute: Service de Physique de l'Etat Condense CEA Saclay Bat 772 Orme des Merisiers F-91191 Gif Sur Yvette FRANCE Permanent Institute e mail <a href="mailto:florence.albenque-rullier@cea.fr">florence.albenque-rullier@cea.fr</a>	FRANCE	<b>PARTICIPANT</b>
98.	<b>SABEEH Kashif</b> Research Field : <b>LOW-DIMENSIONAL SYSTEMS, GRAPHENE</b>  Research Topic : <b>ELECTRONIC TRANSPORT, COLLECTIVE EXCITATIONS</b>  Permanent Institute: Physics Department Quaid-i-Azam University 3rd Avenue Islamabad 45320 PAKISTAN Permanent Institute e mail <a href="mailto:ksabeeh@qau.edu.pk">ksabeeh@qau.edu.pk</a>	PAKISTAN	<b>PARTICIPANT</b>
99.	<b>SADEGHI Azam</b> Research Field :  Research Topic :  Permanent Institute: Isfahan University of Technology IUT Department of Physics 84156-83111 Isfahan ISLAMIC REPUBLIC OF IRAN Permanent Institute e mail <a href="mailto:a.sadeghi@ph.iut.ac.ir">a.sadeghi@ph.iut.ac.ir</a>	ISLAMIC REPUBLIC OF IRAN	<b>PARTICIPANT</b>



No.	NAME and INSTITUTE	Nationality	Function
100.	<b>SARVESTANI Esmaeel</b> Research Field : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>SUPERCONDUCTIVITY , DISORDER EFFECTS</b>	ISLAMIC REPUBLIC OF IRAN	<b>PARTICIPANT</b>
	Permanent Institute: Faculty of Physics Isfahan University of Technology Danesghah e Sanati Blvd. 8415683111 Isfahan ISLAMIC REPUBLIC OF IRAN Permanent Institute e mail e.sarvestani@ph.iut.ac.ir		
101.	<b>SENGUPTA Shamashis</b> Research Field : <b>STRONGLY CORRELATED SYSTEMS, NANOSCIENCE</b>  Research Topic : <b>SUPERCONDUCTORS, CHARGE DENSITY WAVES, RESONATORS</b>	INDIA	<b>PARTICIPANT</b>
	Permanent Institute: Nanoelectronics Laboratory Department of Condensed Matter Physics and Materials Science Tata Institute of Fundamental Research TIFR TIFR Main Building Homi Bhabha Road Colaba Mumbai 400005 Maharashtra INDIA Permanent Institute e mail shamashis@tifr.res.in		
102.	<b>SHAHBAZI DASTJERDE Farhad</b> Research Field :  Research Topic :	ISLAMIC REPUBLIC OF IRAN	<b>PARTICIPANT</b>
	Permanent Institute: Isfahan University of Technology Department of Physics 84156 Isfahan ISLAMIC REPUBLIC OF IRAN Permanent Institute e mail shahbazi@cc.iut.ac.ir		

No.	NAME and INSTITUTE	Nationality	Function
103.	<b>SHIKIN Valeri</b> Research Field : <b>CONDENSED MATTER</b>  Research Topic : <b>CORRELATION PHENOMENA IN CONDENSED MATTER</b>	RUSSIAN FEDERATION	<b>PARTICIPANT</b>
	Permanent Institute: Institute of Solid State Physics Theoretical Department Institute st., 2 142432 Chernogolovka Moscow district RUSSIAN FEDERATION Permanent Institute e mail shikin@issp.ac.ru		
104.	<b>SICA Gerardo</b> Research Field : <b>THEORETICAL CONDENSED MATTER PHYSICS</b>  Research Topic : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>	ITALY	<b>PARTICIPANT</b>
	Permanent Institute: University of Salerno Faculty of Mathematical, Physical and Natural Science Department of Physics ER Caianiello Via Ponte don Melillo Fisciano 84084 SA ITALY Permanent Institute e mail gerardo.sica@sa.infn.it		
105.	<b>TADA Yasuhiro</b> Research Field : <b>STRONGLY CORRELATED ELECTRON SYSTEMS</b>  Research Topic : <b>SUPERCONDUCTIVITY, QUANTUM CRITICALITY</b>	JAPAN	<b>PARTICIPANT</b>
	Permanent Institute: Department of Physics Kyoto University Sakyo-ku Kyoto 606-8502 JAPAN Permanent Institute e mail tada@scphys.kyoto-u.ac.jp		

No.	NAME and INSTITUTE	Nationality	Function
106.	<b>THAMIZHAVEL Arumugam</b> Research Field : <b>SINGLE CRYSTAL GROWTH</b>  Research Topic : <b>ANISOTROPIC MAGNETIC PROPERTY STUDIES</b>	INDIA	<b>PARTICIPANT</b>
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107.	<b>TZE TZEN Ong</b>  Research Field : <b>KONDO LATTICES</b>  Research Topic :	PEOPLE'S REPUBLIC OF CHINA	<b>PARTICIPANT</b>
	Permanent Institute: Stanford University Department of Applied Physics Via Pueblo Mall CA 94305-4090 Stanford UNITED STATES OF AMERICA Permanent Institute e mail <a href="mailto:tzen@stanford.edu">tzen@stanford.edu</a> , <a href="mailto:tzen.ong@gmail.com">tzen.ong@gmail.com</a>		
108.	<b>VENTURA Cecilia Ileana</b> Research Field :  Research Topic :	ARGENTINA	<b>REGULAR ASSOCIATE</b>
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No.	NAME and INSTITUTE	Nationality	Function
109.	<b>VIDMAR Lev</b> Research Field : <b>STRONGLY CORRELATED SYSTEMS</b>  Research Topic : <b>MOTT INSULATORS, ELECTRON-PHONON INTERACTION</b>  Permanent Institute: Department for Theoretical Physics Jozef Stefan Institute Jamova 39 SI-1001 Ljubljana SLOVENIA Permanent Institute e mail lev.vidmar@ijs.si	SLOVENIA	<b>PARTICIPANT</b>
110.	<b>WISSGOTT Philipp</b> Research Field : <b>THEORETICAL SOLID STATE PHYSICS</b>  Research Topic : <b>THERMOELECTRICS, MONTE CARLO ALGORITHMS</b>  Permanent Institute: Institute for Solid State Physics Vienna University of Technology Wiedner Hauptstrasse 8-10 1040 Vienna AUSTRIA Permanent Institute e mail wissgott@ifp.tuwien.ac.at	AUSTRIA	<b>PARTICIPANT</b>
111.	<b>WRZODAK Jakub</b> Research Field : <b>STRONGLY CORRELATED ELECTRONS</b>  Research Topic : <b>GENERALIZED FALICOV-KIMBALL MODEL</b>  Permanent Institute: Institute of Low Temperature and Structure Research Polish Academy of Sciences ul- Okolna 2 50-422 Wroclaw POLAND Permanent Institute e mail J.Wrzodak@int.pan.wroc.pl	POLAND	<b>PARTICIPANT</b>

No.	NAME and INSTITUTE	Nationality	Function
112.	<b>ZAREYAN Malek</b> Research Field :  Research Topic :  Permanent Institute: Institute for Advanced Studies in Basic Sciences IASBS P.O. Box 45195-1159 Gava-Zang Zanjan 45195 ISLAMIC REPUBLIC OF IRAN Permanent Institute e mail zareyan@iasbs.ac.ir	ISLAMIC REPUBLIC OF IRAN	<b>REGULAR ASSOCIATE</b>
113.	<b>ZHOU Pingheng</b> Research Field : <b>CONDENSED MATTER PHYSICS</b> Research Topic : <b>ELECTRONIC STRUCTURE AND MAGNESTISM</b>  Permanent Institute: School of Physical Science and Technology Lanzhou Unversity 222 South Tianshui Road 730000 Lanzhou Gansu PEOPLE'S REPUBLIC OF CHINA Permanent Institute e mail zhoup@lzu.edu.cn	PEOPLE'S REPUBLIC OF CHINA	<b>PARTICIPANT</b>
			Present Institute: CAMD Louisiana State University 6980 Jefferson Hwy Baton Rouge LA 70802 UNITED STATES OF AMERICA Present Institute e-mail: zhoup@lsu.edu Until: <b>1 January 2011</b>