Preface

The 2014 International Conference on Strongly Correlated Electron Systems (SCES) was held in Grenoble from the 7th to 11th of July on the campus of the University of Grenoble. It was a great privilege to have the conference in Grenoble after the series of meetings in Sendai (1992), San Diego (1993), Amsterdam (1994), Goa (1995), Zürich (1996), Paris (1998), Nagano (1999), Ann Arbor (2001), Krakow (2002), Karlsruhe (2004), Vienna (2005), Houston (2007), Buzios (2008), Santa Fe (2010), Cambridge (2011) and Tokyo (2013). Every three years, SCES joins the triennial conference on magnetism ICM. In 2015, ICM will take place in Barcelona.

The meeting gathered an audience of 875 participants who actively interacted inside and outside of conference rooms. A large number of posters (530) was balanced with four parallel oral sessions which included 86 invited speakers and 141 short oral contributions**.** A useful arrangement was the possibility to put poster presentations on the website so participants could see them all through the conference week. Each morning two plenary sessions were held, ending on Friday with experimental and theoretical summaries delivered by Philipp Gegenwart (Augsburg) and Andrew Millis (Columbia). The plenary sessions were given by Gabriel Kotliar (Rutgers), Masashi Kawasaki (Tokyo), Jennifer Hoffman (Harvard), Mathias Vojta (Dresden), Ashvin Vishwanath (Berkeley), Andrea Cavalleri (Hamburg), Marc-Henri Julien (Grenoble), Neil Mathur (Cambridge), Giniyat Khaliullin (Stuttgart), and Toshiro Sakakibara (Tokyo).

The parallel oral sessions were prepared by 40 symposium organizers selected by the chairman (Antoine Georges) and co-chairman (Kamran Behnia) of the Program Committee with the supplementary rule that speakers had not delivered an invited talk at the previous SCES conference held in 2013 in Tokyo. Special attention was given to help young researchers via grants to 40 overseas students. Perhaps due to the additional possibility of cheap accommodation, the balance between senior and junior physicists was excellent. The weather also collaborated in a sense that the conference week was cooler than usually in July, although participants without umbrellas were often seen crossing the campus at speed!

The two SCES prizes sponsored by the Philosophical Magazine to bright young physicists were respectively awarded to Max A. Metlitski (Santa Barbara) for the Mott Prize, and David Leboeuf (Grenoble) for the Coles Prize. The Coqblin Prize for developing SCES physics in emerging countries was given to Andre Strydom (Johannesburg).

Of course we would like to thank all the members of the organizing committee of SCES managed by Klaus Hasselbach. During the SCES Conference two of us (JF and GL) remembered that 27 years ago, the late Jean Rossat-Mignod organized the conference ICAREA (1987) before the start of the SCES series. His enthusiasm is still with us.

Topics presented at SCES2014 covered the wide area of strong correlations in Condensed Matter Physics. This proceedings volume contains papers reported at the conference, which are structured in 10 sections:

S01 Heavy fermions
S02 Mott insulators, correlated metals and intermetallics
S03 Unconventional superconductors
S04 Quantum criticality
S05 Exotic ordering

S06 Frustrated and quantum magnets
S07 Multiferroics
S08 Topological aspects
S09 Low-dimensional systems and heterostructures
S10 Instrumentation and methods

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Jacques Flouquet and Gerry Lander (Chairmen)
Georg Knebel (General Secretary), Daniel Braithwaite (Treasurer)

List of symposiums with the organizers

Novel oxide interface phenomena	J.M. Triscone
Quantum magnetism	Th. Giamarchi
Novel praseodymium materials	S. Nakatsuji
ARPES in correlated-electron systems	V. Brouet
Heavy fermion STM research	J.C. Seamus Davis
Quantum magnetism studied by neutron scattering	H. Schober
Correlated thermoelectric	T. Takabatake
New theoretical insights	P. Riseborough
Heavy fermion superconductivity	J. Thompson
Correlated electron physics in iridates	L. Balents
Multiferroics	T. Kimura
Fermi surface : theory versus experiment	H. von Löhneysen
Topological Insulators, Experiments	Y. Wang
The superconductivity of Sr_2RuO_4	A. Mackenzie
Ferromagnetism and quantum criticality	C. Geibel
Electronic structure and correlations	A. Georges
Kondo lattice	G. Zwicknagl
Superconductivity and Hubbard model	A. Millis
Domains in multiferroics	A. Cano
Superconductivity, vortices, mixed State	K. Izawa
Valence and orbital criticality	M.B. Maple
Iron-based superconductors	P.C. Canfield
Ferromagnetism and superconductivity	K. Ishida
New perspectives	K. Behnia
Frustration	C. Lacroix
Correlated superconductivity, theory and experiment	J. Schmalian
New materials	Y. Haga
New cases of quantum criticality	M. Saxena
Experimental highlights	J. Spalek
Cuprate superconductors	Ph. Bourges
Actinides	G.H. Lander
Topological insulators, theory	E. Mele
Quantum oscillations of correlated electrons	A. Carrington

Exotic superconductivity	K. Miyake
Thermal transport at very low temperature	L. Taillefer
Multipolar orders	R. Caciuffo
Quantum critical points	S. Julian
Correlated electrons in high magnetic field	N. Hussey
Spin orbitronics and skyrmions	A. Rosch
Brainstorm on synchrotron radiation	L. Paolasini