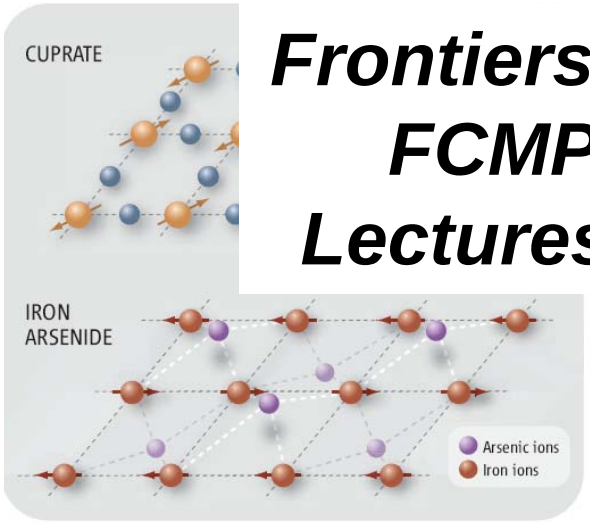
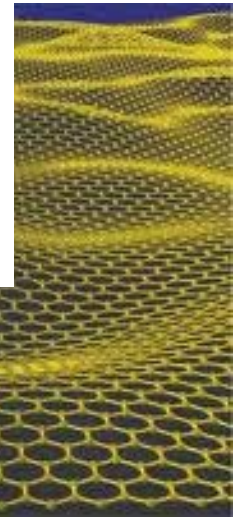
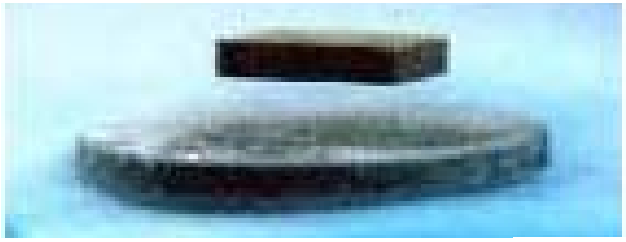
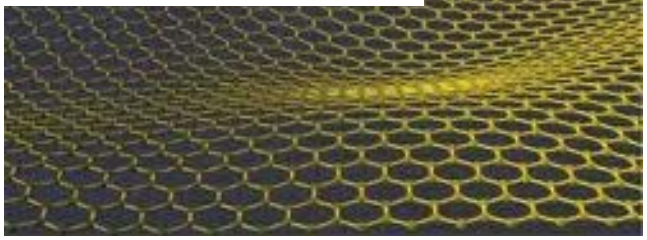


Frontiers of Condensed Matter Physics
FCMP Paris / Palaiseau 2017 Fall
Lectures by leading CMP researchers







Inviting participants / audience among graduate students, postdocs and senior scientists from Ecole Polytechnique, Orsay, Thales, CEA, Diderot, UPMC, ESPCI, Ecole Normale to live lectures.
To be simulcasted to Columiba (US), PSI, MPI
65 minutes lectures given by international leaders in Superconductivity, Magnetism, Spintronics,

Fall 2017: Sep 8 – Dec 15
Fridays 2:10 – 4:45 PM
Two lectures per each Friday
at CUGC Reid Hall (Paris Vavin)
and Ecole Polytechnique
Pedagogical talks for entry–level
+ more senior grad students

Confirmed Speakers: Aeppli (PSI); Basov (Columbia); Behnia* (ESPCI); Bianconi* (Rome); Blundell (Oxford); Bramwell (UCL); Cavalleri (Hamburg); Coleman (Rutgers); Dai (Rice); JC Davis (Cornell); Fert (Thales); Gauzzi* (UPMC); Georges (EP/Simons); de Medici* (ESPCI); Imada (Tokyo); Konczykowski* (EP); Lanzara (Berkeley); Lonzarich (Cambridge); Maekawa (JAEA); Mendels* (Orsay); Sacuto* (Diderot); Santander-Syro (Orsay); Saitoh (Tohoku); Pepin* (CEA); Perfetti* (EP); Prassides (Tohoku); Taillefer (Sherbrooke); Uemura* (Columbia); van der Marel (Geneva); van der Beek* (EP)

* organizers FCMP Workshop in Rome Frascati in 2018 June Columbia course GR6026

Frontiers of Condensed Matter Physics (FCMP) Lectures in Paris / Palaiseau

We are organizing the FCMP Lectures in Paris for the Fall 2017 Semester, and likely also provide another course in the Spring 2018 Semester.

FCMP Lectures:

FCMP Lecture Course was initiated at Columbia University in New York in 2011 as a lecture course for graduate students motivated in research of condensed matter physics. The lecturers are chosen among international leaders of studies on unconventional superconductors, novel magnetic systems, spintronics, low-dimensional conductors, quantum Hall effect and topological materials. Each lecturer gives one or two 60-65 minutes presentation(s) on their own research subject, followed by about 10 minutes of discussions. The lecturer takes special care in pedagogical, historical and intuitive presentations so that even entry-level graduate students can fully enjoy the lecture with several take-home messages. All the FCMP lectures are given with power point presentations, and recorded into a high quality voice-synchronized videos which are made available to enrolling students as well as to motivated graduate students in cooperating institutions in foreign countries. Since 2011, FCMP courses have been offered every year, and more than 200 videos of the previous lectures have been archived. List of previous FCMP courses are shown in the attached pdf file.

Simultaneous Broadcast (Simulcast)

Since 2013, we have started broadcasting live lectures at remote institutions using video conferencing programs. Graduate courses using simulcast of lectures given mainly at Columbia have been organized at Rice University and University of Oregon Eugene. University of California Berkeley started to form a private and voluntary listening group in the Spring 2017 Semester. Presently, we are using a video conference program "Zoom" which allows simulcast of high audio-visual quality, questions asked by audience from remote locations, and more than 10 simultaneous listening groups connected via internet.

Video-based courses and seminars

Videos of about 25 FCMP lectures given at Columbia in the Fall 2011 semester were used in the graduate course at University of Tokyo, about two months after the original live lecture in New York. In 2012, 23 FCMP live lectures were given in English language at U. Tokyo by 12 leading CMP physicists in Japan. Videos of these Tokyo 2012 FCMP lectures were used in the Fall 2012 semester at Columbia in the official graduate course. Archives of FCMP lecture videos have also been used at seminars in Tsinghua U, Fudan U, IOP Beijin, Zhejiang U.

Companion FCMP Seminars in Japan

Presently, FCMP Seminars are organized at U Tokyo by Profs. Fujimori and Aoki, inviting leading researchers of unconventional superconductivity about once a month. Each lecture is simulcasted to the Kashiwa Campus of U Tokyo, Kyoto U, KEK and JPARC, similarly to the

FCMP lectures in the US. All the FCMP Seminars in Japan are recorded, and archived together with the US FCMP lectures in a password-protected Vimeo site.

Previous FCMP Workshops and Tours Abroad

In 2012 and 2013, oversea tours of ~ 7 days were organized for 7 Tokyo U grad students to visit Columbia and BNL, and for 17 Columbia grad students to visit Tokyo U, Kyoto U and Spring-8 Synchrotron facility in Japan, after the students finished one semester of the FCMP lecture course. Then we organized more extended international workshops to invite graduate students and lecturers of FCMP courses given at multiple campuses. These workshops were given in Beijing in 2014 (with about 200 participants), Vancouver in 2015 (100 participants), and Tokai-Tokyo in 2017 (100 participants). The Vancouver Workshop was also associated with hands-on experiment training session on muon spin relaxation methods using muon beam delivered at TRIUMF accelerator in Vancouver, and the Tokai-Tokyo Workshop offered an extended tour of neutron, muon and particle-physics facilities of JPARC accelerator in Japan.
Some of the presentations given in these Workshops have also been added to the FCMP archives.

Plans for 2017 FCMP Lectures in Paris-Palaiseau

Lecture dates: All Fridays starting September 8 until December 15 in the Fall 2017 semester: Two lectures per day by two different speakers. With synergy connection of the subjects of the two presentations if possible. We will most-likely organize a separate FCMP lectures also in the Spring 2018 semester.

Lecture location:
(A) Reid Hall at the Columbia University Global Center (CUGC) in Paris: located near the Metro station Vavin, and Jardin du Luxembourg. Address: 4 Rue de Chevreuse, 75006 Paris
(B) Ecole Polytechnique
Alternating live lectures at (A) and (B) week by week.
Offering simulcast at (A) and (B) for the week in which live lectures are given at the other location. This is to reduce commuting time on RER between Paris and Palaiseau.

Organizers:
Ecole Polytechnique: Kees van der Beek, Luca Perfetti and Marcin Konczykowski
U. Paris-Sud Orsay: Phlippe Mendels
CEA Saclay: Catherene Pepin
CNRS Thales: Vincent Cros (to be confirmed)
U. Paris Diderot: Alain Sacuto
U. Pierre et Marie Curie: Andrea Gauzzi
ESPCI: Kamran Behnia, Luca de Medici
Columbia / Ecole Polytechnique: Yasutomo Uemura
Rome (including 2018 FCMP Workshop in Rome-Frascati): Antonio Bianconi

Plans for simulcast:
All the lectures will be sumulcasted to a graduate course GR6026 at Columbia University in the Fall 2017 Semester: New York Time 8:10 – 10:45 AM.

Lectures will also be simulcasted to Paul Scherrer Institute (Switzerland), Max Planck Institute (Germany) and a few other locations.

Course Credit and Grading

If offered as an official graduate course at each Paris / Palaiseau / Orsay school, the course will have the local organizing faculty members as the responsible teacher. Attendance will be taken, and 50% of attendance is required for obtaining credit. In addition, two light-road essays are to be submitted during a given semester, describing questions, comments, etc. on two FCMP lectures of the student's choice. Before each lecture, a brief reference of the speaker's representative work will be made available for convenience of students to get acquainted with the subject of the talk before the presentation. This is, however, not a reading assignment.

Discussion time after the talks and two dinner parties for the attendants.

Time structure of the presentation day:
2:00 PM Lecture Hall ready
2:10 – 3:15 PM: Lecture I presentation
3:15 – 3:25 PM: Lecture I discussion time
3:30 – 4:35 PM: Lecture II presentation
4:35 – 4:45 PM: Lecture II discussion time
4:50 – 5:30 PM: Free discussion Coffee Hour with lecturers

Gathering of all participants from all the Paris-Palaiseau institutions.
Dinner parties
Oct. 27 at CUGC:
After FCMP lectures of Gil Lonzarich (Cambridge) and Louis Taillefer (Sherbrooke)
Dec. 15 at Ecole Polytechnique:
After FCMP lectures of Albert Fert (Thales) and Alessandra Lanzara (Berkeley)

FCMP Workshop in Rome-Frascati in June of 2018

Antonio Bianconi and Tomo Uemura are planning to organize an FCMP Workshop at Frascati Synchrotron Facility near Rome in June of 2018. Depending on funds available, we will provide support for full or partial travel expenses to the FCMP Workshop to graduate students enrolled in the 2017 Paris FCMP lecture course. If only limited travel funds are available, priority will be given based on attendance record to the FCMP lectures.

Schedules of speakers and live lecture locations: Paris-Palaiseau FCMP I in Fall 2017

Date	Location Live / (simulcast)	Lecturer 1	Lecturer 2
Sep 8	CUGC (EP)	Tomo Uemura (Columbia / EP)	Kamran Behnia (ESPCI)
Sep 15	EP (CUGC)	Stephen Blundell (Oxford)	Philip Mendels (Orsay)
Sep 22	CUGC (EP)	Dirk van der Marel (Geneva)	TBA
Sep 29	EP (CUGC)	Alain Sacuto (Diderot)	TBA
Oct 6	EP (TBA)	Sadamich Maekawa (JAEA)	Eiji Saitoh (JAEA/Tohoku)
Oct 13	CUGC (EP)	Piers Coleman (Rutgers)	TBA
Oct 20	EP (TBA)	JC Seamus Davis (Cornell)	Masatoshi Imada (Tokyo)
Oct 27	CUGC	Gil Lonzarich (Cambridge)	Louis Taillefer (Sherbrooke)
	Party: no simulcast	Dinner Party at CUGC after the event	
Nov 3	EP (CUGC)	Catherene Pepin (CEA)	Luca de Medici (ESPCI)
Nov 10	CUGC (EP)	Antonio Bianconi (Rome)	Marcin Konczykowski (EP)
Nov 17	EP (CUGC)	Pengcheng Dai (Rice)	TBA
Nov 24	CUGC (EP)	Dimitri Basov (Columbia)	Antoine Georges (EP / Simons)
Dec 1	EP (CUGC)	Andrea Cavelleri (Hamburg)	Luca Perfetti (EP)
Dec 8	CUGC (EP)	Kosmas Prassides (Tohoku)	Steve Bramwell (UCL)
Dec 15	EP	Albert Fert (Thales)	Alessandra Lanzara (Berkeley)
	Party: no simulcast	Dinner Party at Ecole Polytechnique after the event	

A different class Paris FCMP-II in Spring 2018

Jan 12	Gabe Aeppli (PSI)	Kees van der Beek (EP)
Jan 19	Andrea Gauzzi (UPMC)	TBA
Jan 26	Andres Santander Syro (Orsay)	TBA

Most-likely continuing until April 2018

Columbia University Global Center in Paris