



SPG MITTEILUNGEN COMMUNICATIONS DE LA SSP

NR. 19

September 2006

**Annual Meeting of the Swiss Physical Society
February 20 - 21, 2007 at Uni Zürich**



The SPS meeting 2007 will be held on the Irchel campus of the University of Zürich. We would like to thank Prof. Jürg Osterwalder and the local staff for their kind support.

Scientific Program

The program will include the following topics:

- regular sessions KONN, ANDO, TASK
- topical sessions (see next pages for details)
- award session
- general assembly of the SPS
- vendors exhibition
- conference dinner

Award Session and General Assembly of the SPS

As usual three outstanding scientific works for the SPS awards will be chosen in the fields of General Physics (sponsored by ABB Research Center), Condensed Matter Physics (sponsored by IBM Zürich Research Laboratory), and Applied Physics (sponsored by Unaxis), donated each with CHF 5000.-. The award ceremony will be held on February 20, 2007.

The general assembly of the SPS will take place in the afternoon of February 20, 2007.

Conference Dinner

The conference dinner will be held after the general assembly at the "ETH Bibliothek". Before dinner, a visit to the archives (Pauli Archives etc.) is programmed with selected guided tours. The price is CHF 50.- per person (including visit, apéro, meal, drinks). Please use the attached form for registration.

Vendors Exhibition

In parallel to the conference a vendors exhibition will take place. A separate letter will be mailed to various companies around mid- October 2006, to invite them to participate in the meeting. If your company wants to participate, but has not received a letter from us by the end of October, please send an email to: sps@unibas.ch

CALL FOR ABSTRACTS: SUBMISSION DEADLINE is November 20, 2006

Abstracts from all fields of physics are invited for submission. Oral and poster contributions are welcome. In addition to the sessions KONN (Condensed Matter Physics), ANDO (Applied Physics) and TASK (Particle, Nuclear and Astrophysics) five topical sessions with invited and contributed speakers are programmed (see below). The contributions will be divided into oral and poster presentations. All posters will be presented in one single poster session.

NEW: It is now possible to submit your abstracts online. Visit our webpage www.sps.ch and follow the link to the submission form. Further explanations are available there.

The conference program will also be available on www.sps.ch around mid-January 2006.

IMPORTANT: The submission deadline for abstracts is November 20, 2006. It has to be respected in order to enable proper organization of the conference program and on time shipment of the conference bulletin. Late coming submissions will be refused.

Conference Fees, Registration and Payment

The conference fees cover both days, including coffee breaks (both days) and the lunchbuffet on Wednesday. Tuesday evening dinner will be charged seperately.

Special offer for non-members:

You plan to participate in our meeting and you want also to become a member of the SPS ? You can do so now for a very reduced price of only CHF 90.- ! This amount covers the conference fee and your new SPS membership for 2007. Of course, the discount rule for early payments (see below) also applies. Do not miss this offer, so fill out the attached forms and return them as soon as possible.

Pay your conference fee in advance and save money !

We offer a reduction of CHF 10.- (as shown below) to participants who pay their conference fees until February 1st, 2007. Please make sure that your name and the purpose of the payment are transmitted.

Payments can be made to the following account:

Swiss Post - Postfinance, Account 80-8738-5, for Swiss Physical Society, 4056 Basel

Payments reaching us after February 1st, 2007, must show the regular amount. Participants paying cash at the conference will also have to pay the full amount. Credit cards are not accepted.

Attention: Fees are not refundable.

The fees are the following (all prices in CHF):

	Regular	Before February 1st
SPS members and chairpersons	60.-	50.-
Students (students licence required)	60.-	50.-
Invited and plenary speakers, awardees	0.-	0.-
Other persons	80.-	70.-
"Not yet" members special offer (see above)	90.-	80.-
Dinner and Archives (*)	50.-	50.-

(*) free for plenary speakers, chairpersons, awardees, organizing staff

Registration Deadline: February 1st, 2007

Please use the attached form for registration. The form is also available on www.sps.ch.

Group registrations

If several members (≥ 4) of your group or laboratory want to participate in our meeting, you don't have to fill out a registration form for every person. Please contact the SPS-Secretariat (sps@unibas.ch). We will then send you a special electronic form where you can insert the necessary data.

Topical Sessions

Plenary Session

The meeting will start on Tuesday, 20.02.2007, at 9:30 with four plenary talks:

Prof. Klaas P. Pruessmann, Uni & ETH Zürich: *Challenges and Opportunities for High Field Magnetic Resonance Imaging*

Prof. Heinz Gaggeler, Uni Bern & PSI: *Recent achievements in the search and identification of superheavy elements*

Prof. Alexander Wokaun, PSI: *Roadmap to a more sustainable energy system*

Prof. Michele Parinello, ETH Zürich & Lugano: *Title not yet known*

Physics and Medicine

Biomedical Engineering, more generally also called Bioengineering, is an exciting and growing field which resides at the interfaces between natural sciences and engineering, biology and medicine. The broad goal of biomedical engineering is to solve human health problems through advances in diagnosis, treatment and/or prevention of human disease.

In the proposed session selected fields of biomedical engineering, for which physics plays an important role in medicine and biology, will be presented. Examples will be discussed from areas such as biomechanics, bioimaging, medical micro and nanotechnologies, molecular bioengineering, biomaterials, bioinstrumentation, and biosensors.

Beside one plenary and some invited speakers, contributed oral and poster presentations are most welcome.

Contact: Prof. Peter Bösiger, Institute for Biomedical Engineering, University and ETH Zürich
(boesiger@biomed.ee.ethz.ch)

Physics in Industry and Economy

Many physicists continue their career in industry, service providers and administration. They contribute with their physics knowledge and modeling abilities to challenging multidisciplinary tasks: developing products and processes, formulating industrial standards and designing models for various forecasts, ranging from meteorology to finance.

It is planned to present in all future annual SPS-meetings topics from applied physics. The coming session will focus on the role of modern optics and photonics in our present day environment.

Invited speakers:

Dr. Karl Knop, CSEM, Neuchâtel: *How Optics Changed the World over the past 50 Years*

Dr. Reinhard Czichy, Synopta GmbH, Eggersriet: *Optical Communications in Space - History, Technologies, Programs*

Contributed oral or poster presentations, also from other applied topics, are very welcome.

Contact: Dr. Ernst Ramseier, Leica Geosystems AG, Heerbrugg (ernst.ramseier@leica-geosystems.com)



**Anmeldung für eine Präsentation an der Jahrestagung der
SPG in Zürich, 20. - 21.02.2007**

**Inscription pour une présentation lors de la réunion annuelle
de la SSP à Zürich, 20. - 21.02.2007**

NEU:

**Ab sofort können Abstracts nur noch elektronisch eingereicht werden.
Auf unserer Webseite www.sps.ch finden Sie ein Anmeldeformular mit
weiteren Hinweisen.**

NOUVEAU:

**Désormais les abstracts ne pourront être soumis que sous forme élec-
tronique. Vous trouverez un formulaire avec les instructions nécessaires
sur notre site www.sps.ch .**



Anmeldung zur Teilnahme an der SPG-Jahrestagung 2007 Inscription pour la réunion annuelle 2007 de la SSP

Name, Vorname, Adresse, Email - Nom, prénom, adresse, adresse email:

Konferenzgebühr (incl. Kaffeepausen und Lunchbuffet am Mittwoch)

Finance d'inscription (incl. pauses café et buffet-lunch du mercredi):

- | | | |
|--------------------------|--|-----------|
| <input type="checkbox"/> | SPG-Mitglieder, Chairpersons / membres de la SSP, Chairpersons | 60.- CHF |
| <input type="checkbox"/> | Studenten / étudiants | 60.- CHF |
| <input type="checkbox"/> | Eingeladene Sprecher, Preisträger / Conférenciers invités, lauréats | 0.- CHF |
| <input type="checkbox"/> | Andere Teilnehmer / Autres participants | 80.- CHF |
| <input type="checkbox"/> | SPEZIALANGEBOT: Konferenzgebühr inklusive Neumitgliedschaft 2007 /
OFFRE SPECIALE: Frais de conférence et inscription en qualité de nouveau membre 2007
Bitte nebenstehendes Anmeldeformular ausfüllen. / Veuillez remplir le formulaire ci-joint svp. | 90.- CHF |
| <input type="checkbox"/> | Rabatt für Vorauszahlung bis 01. Februar 2007 /
Réduction sur les paiements effectués jusqu'au 1 ^{er} février 2007 | -10.- CHF |

Weitere Gebühren / Autres frais:

- Abendessen (incl. Getränke und Archivführung) / Souper (boissons et visite des archives incluses)
____ Mit Fleisch / Avec viande ____ Vegetarisch / végétarien ____ x 50.- CHF = ____ CHF
Bitte Anzahl Personen beim entsprechenden Menü eintragen. / Veuillez marquer le nombre de personnes pour le menu choisi.

Gesamtbetrag / Montant total _____ **CHF**

Ich überweise gleichzeitig mit dieser Anmeldung den Gesamtbetrag auf das Postkonto 80-8738-5. (Bitte unbedingt Name und Zahlungszweck angeben !)

En même temps je verse le montant total sur le compte postal 80-8738-5 (merci d'indiquer votre nom et la raison de votre paiement !).

Datum, Unterschrift - Date, signature: _____

Anmeldeschluß - Delai d'inscription: 01.02.2007



Anmeldung SPG Mitgliedschaft - Admission à la SSP

Name - Nom; Vorname - Prénom

Titel - Titre | Geburtsdatum - Date de naissance

Privatadresse - Adresse privée

Tel. | Fax

Email

Geschäftsadresse - Adresse professionnelle

Tel. | Fax

Email

Code (siehe Rückseite - voir au verso)

Bevorzugte Sprache - Langue préférée

Zustelladresse - Adresse postale

Student - Etudiant

Doktorand - Doctorant

Mitglied in - Membre en

<input type="checkbox"/> Deutsch <input type="checkbox"/> Français	
<input type="checkbox"/> privat - privée <input type="checkbox"/> Geschäft - professionnelle	
<input type="checkbox"/> Ja - Oui seit - depuis _____	
<input type="checkbox"/> Ja - Oui seit - depuis _____	
<input type="checkbox"/> DPG seit - depuis _____ Mitgliedsnr. - No. de membre _____	
<input type="checkbox"/> ÖPG seit - depuis _____ Mitgliedsnr. - No. de membre _____	
<input type="checkbox"/> APS seit - depuis _____ Mitgliedsnr. - No. de membre _____	

Folgende Daten dürfen im Mitgliederverzeichnis erscheinen - Les données suivantes peuvent figurer dans l'index des membres:

- | | |
|---|---|
| <input type="checkbox"/> Privatadresse - Adresse privée | <input type="checkbox"/> Geschäftsadresse - Adresse professionnelle |
| <input type="checkbox"/> Nur Name - Seulement le nom | <input type="checkbox"/> Keine - Aucune |

Datum, Unterschrift - Date, Signature

Code

(Nur für statistische Zwecke - Seulement à des fins statistiques)

Ausbildung (1 Buchstabe) / Education (1 lettre):

a = Theoretische Physik / physique théorique, **b** = Experimentalphysik / physique expérimentale,
c = Chemie / chimie, **d** = Mathematik / mathématique,
e = Ingenieurwissenschaft / sciences de l'ingénieur, **f** = Sonstige / autres

Arbeitsstelle (max. 2 Buchstaben) / Lieu de travail (max. 2 lettres):

g = Gymnasium, Technikum, Mittelschule / gymnase, lycée, technicum,
h = Universität / université, **i** = ETH / EPF, **k** = CERN, **l** = PSI,
m = staatliches Forschungslabor / laboratoire de recherche de l'Etat,
n = industrielles Forschungslabor / laboratoire de recherche industriel, **o** = Industrie,
p = Behörde / administration, **q** = Sonstige / autres

Tätigkeit (max. 2 Buchstaben) / Occupation (max. 2 lettres):

r = Lehre / enseignement, **s** = Forschung / recherche, **t** = Management / management,
u = Student / étudiant, **v** = Verwaltung / administration, **w** = pensioniert / en retraite,
z = Sonstige / autres

Tätigkeitsgebiet (max. 2 Buchstaben) / Spécialité (max. 2 lettres):

A = Festkörperphysik / corps solide, **B** = Kernphysik / physique nucléaire,
C = Teilchenphysik / physique des particules,
D = Astrophysik, Astronomie / astrophysique, astronomie, **E** = Atomphysik / physique atomique,
F = Plasmaphysik / physique des plasmas, **G** = Molekülphysik / physique moléculaire,
H = Gravitation, Relativität / gravitation, relativité,
I = Strahlung, Strahlenschutz / radioactivité, protection contre les radiations,
K = Chemie / chimie, **L** = Informatik / informatique, **M** = Didaktik / didactique,
N = Tieftemperatur, Supraleitung / basses températures, supraconductivité,
O = Magnetismus / magnétisme, **P** = Materialforschung / science des matériaux,
Q = Kristallographie / cristallographie, **R** = Vakuum, dünne Schichten / vide, couches minces,
S = Theorie / théorie, **T** = angewandte Physik / physique appliquée,
U = Thermodynamik, statistische Physik / thermodynamique, **V** = Laser, Optik / laser, optique,
W = Medizin / médecine, **X** = Raumforschung / recherche spatiale, **Z** = Sonstige / autres

Bitte senden an - A retourner s.v.p. à:

SPG-Sekretariat
Institut für Physik
Klingelbergstr. 82
CH-4056 Basel

Computational Physics

This session is devoted to different aspects of Computational Physics, which has become a major player in most fields of modern physics.

Centered around condensed matter physics, but with excursions in other fields, this session is intended to cover all recent developments ranging from ab-initio calculations to model simulations, including some promising attempts of cross-fertilization.

The session will consist of one plenary lecture, six invited talks, and contributed oral and poster presentations.

Plenary lecture:

Prof. Michele Parinello, ETH Zürich & Lugano: *Title not yet known*

Invited talks: (* = to be confirmed)

Dr. Wanda Andreoni, IBM Rüschlikon: *Ab-initio simulations in condensed matter physics*

Prof. Antoine Georges, Ecole Polytechnique Palaiseau (F): *Dynamical Mean Field Theory*

Prof. Matthias Troyer, ETH Zürich: *Quantum Monte Carlo simulations* *

Prof. Reinhard Noack, Philipps Univ. Marburg (D): *Density matrix renormalization group* *

Prof. Jens-Uwe Wiese, Uni Bern: *From QCD to Quantum Magnets*

NN: *Title not yet known* *

Contact: Andreas Laeuchli (andreas.laeuchli@epfl.ch) and Frederic Mila (frederic.mila@epfl.ch)

Challenges of Future Energies

Today the world is facing a period of increasing need for energy and in particular for fossil fuels. This demand comes from developed countries but also more and more from developing countries. At the same time concerns raise about an increased influence of anthropogenic emissions on global warming. Therefore good scenarios for a more efficient energy use, for the reduction on emissions and the substitution of fossil fuels by renewable primary energy sources become very relevant. What possibilities do we have? Which challenges do we face? Are there perspectives to combine an energy service level to which we are used with an energy supply system based on predominantly renewable energy carriers?

Plenary speaker:

Prof. Alexander Wokaun, PSI: *Roadmap to a more sustainable energy system*

Invited speakers:

Prof. Aldo Steinfeld, PSI & ETH Zürich: *Renewable Energy Technologies - Present Status and Future Prospects*

Prof. Minh Quang Tran, EPFL: *Potential and vision for fusion technology for the electricity production*

Christian Bach, EMPA: *Challenges and options in the transport sector*

Mark Zimmermann, EMPA: *Building technologies and its applications on the swiss building stock*

Oral and poster contributions are welcome.

Contact: Dr. Philipp Dietrich, PSI (philipp.dietrich@psi.ch)

Teacher's afternoon

Following the tradition of the last years, a special session covering didactical and pedagogical questions of physics education will take place in collaboration with the DPK (Deutschscheizerische Physikkommission). Highschool teachers are welcome to report on past or future events and to present their experiences with new education concepts, the MAR and related topics.

Contact & Chair: Stefan Walser (stefan.walser@alumni.ethz.ch)

The Leonhard Euler Tercentenary

SCNAT Annual Congress in Basel 13th – 14th September 2007

The annual congress of the Swiss Academy of Science (SCNAT) for 2007 has been allocated to Basel, at the request of the Euler Tercentenary Program Committee, and will take place at Basel University on Thursday, September 13th and Friday, September 14th. The Swiss Physical Society (SPS) will contribute a half-day session on Euler's work on physics.

On April 15th, 2007, the birthday of the great Swiss mathematician and scientist Leonhard Euler (1707-1783) will recur for the 300th time; this presents a good occasion for reflecting on his life and his works in their historical context and in their implications for our time. During the whole Euler Tercentenary year, the general public will have various opportunities for encounters with mathematics, the exact sciences, and their history.

Besides providing insights into Euler's scientific achievements - not just for scientists -, the Jubilee will also present an opportunity for the assembled scientists to discuss, with reference to their eminent ancestor, some questions which still challenge the community of researchers and teachers:

How can the current research topics of the individual scientific branches be integrated within a general context ?

How can we overcome the sterile confrontation between "pure" and "applied" science and the short-sighted bias in favour of immediately profitable subjects which threatens to harm the long-term perspective of fundamental research ?

How are particularly gifted students at schools and universities in a context of globalized competition to be encouraged and supported with due regard for the social meaning of education and without compromising the equality of opportunity ?

The manner in which Leonhard Euler - in his long career as the leading mathematician and physicist of his time as well as "Europe's foremost teacher of science" - dealt with these questions can certainly contribute to promote fruitful discussions both among the members of the Academy's several constituent Societies and between them, the academic and economic decision-makers and an interested public.

More information on the web: www.euler-2007.ch

Geschichte der SPG zum hundertjährigen Jubiläum

Die SPG gibt als Vorbereitung zu ihrem Jubiläum im Jahr 2008 eine Rekonstruktion ihrer Geschichte in Auftrag. Das Projekt wird von Alessandra Hool von der Universität Bern im Rahmen ihrer Diplomarbeit durchgeführt. Die Arbeit soll einerseits die Eckdaten und wichtigsten Ereignisse in der Geschichte der SPG beleuchten, andererseits aber auch einen für ein breiteres Publikum lesbaren Text darstellen.

Im ersten Teil wird auf die 1930er bis frühen 1950er Jahre fokussiert, als die wichtigsten Physiker, die in den letzten hundert Jahren in der Schweiz Wissenschaftsgeschichte geschrieben haben, im Vorstand der SPG wirkten, unter anderem Wolfgang Pauli und Paul Scherrer.

Die SPG kann in dieser Zeit als Knotenpunkt für die Schweizer Wissenschaftspolitik verstanden werden. Auch die Kontakte ins Ausland in dieser Zeit sollen beleuchtet werden: Etwa das Verhältnis zur deutschen Schwesergesellschaft – Peter Debye beispielsweise war von 1925 bis 1927 Präsident der SPG und wurde 1937 Präsident der DPG.



Paul Scherrer und Wolfgang Pauli in Zürich; aufgenommen vermutlich Ende der 1940er Jahre. Quelle: CERN.

Der zweite Teil der Arbeit soll einen allgemeinen Überblick über die wichtigsten Daten und Ereignisse in der Geschichte der SPG bieten. Die bisherigen Recherchen haben ergeben, dass die offizielle Gründung im Mai 1908 erfolgte; die erste Versammlung als Tochtergesellschaft der Schweizerischen Naturforschenden Gesellschaft (SNG) fand Ende August / Anfang September während der Jahresversammlung der SNG in Glarus statt. Erster Präsident der SPG war Pierre Chappuis-Sarasin aus Basel, der gleichzeitig auch Sekretär der Naturforschenden Gesellschaft war.

Wir möchten an dieser Stelle alle Leser der SPG-Mitteilungen bitten, Frau Hool direkt zu kontaktieren, wenn sie im Besitz von Dokumenten oder Bildern sind, die für die Arbeit interessant sein könnten:

*Alessandra Hool
Abteilung für Wissenschaftstheorie und
Wissenschaftsgeschichte
Institut für Philosophie
Länggassstrasse 49a
3012 Bern*

hool@philo.unibe.ch



Pierre Chappuis (links) und Fritz Sarasin (rechts), Präsident der SNG, (Ausschnitt aus einem Gruppenbild an der Jahresversammlung 1909).

Vorstandsmitglieder der SPG / Membres du Comité de la SSP

Präsident / Président

Dr. Tibor Gyalog, Uni Basel, tibor.gyalog@unibas.ch

Vize-Präsident / Vice-Président

Dr. Christophe Rossel, IBM Rüschlikon, rsl@zurich.ibm.com

Sekretär / Secrétaire

Dr. Bernhard Braunecker, Leica Geosystems AG, braunecker@bluewin.ch

Kassier / Trésorier

Dr. Pierangelo Gröning, EMPA Thun, pierangelo.groening@empa.ch

Kondensierte Materie / Matière Condensée (KOND)

Prof. Jérôme Faist, Uni Neuchâtel, jerome.faist@unine.ch

Angewandte Physik / Physique Appliquée (ANDO)

Dr. Laurent Sansonnens, EPFL-CRPP, laurent.sansonnens@epfl.ch

Astrophysik, Kern- und Teilchenphysik / Astrophysique, physique nucléaire et corp. (TASK)

Dr. Klaus Kirch, PSI Villigen, klaus.kirch@psi.ch

Theoretische Physik / Physique Théorique (THEO)

Prof. Frédéric Mila, EPFL, frederic.mila@epfl.ch

Industrial Physics (ad interim)

Dr. Ernst Ramseier, Leica Geosystems AG, ernst.ramseier@leica-geosystems.com

SPG Sekretariate / Secrétariats de la SSP

Mitgliederverwaltung, WWW, Druck, Versand, Redaktion Bulletin & SPG Mitteilungen / Service des membres, WWW, impression, envoi, rédaction Bulletin & Communications de la SSP

S. Albietz, SPG Sekretariat, Inst. für Physik, Klingelbergstrasse 82, CH-4056 Basel

Tel. 061 / 267 36 86, Fax 061 / 267 37 84, sps@unibas.ch

Buchhaltung / Service de la comptabilité

F. Erkadoo, SPG Sekretariat, Inst. für Physik, Klingelbergstrasse 82, CH-4056 Basel

Tel. 061 / 267 37 50, Fax 061 / 267 13 49, francois.erkadoo@unibas.ch

Administratives Sekretariat / Secrétariat admin.

Sandra Hüni, Dept. Informatik, Klingelbergstr. 50, CH-4056 Basel

sandra.hueni@sps.ch

www.sps.ch

Impressum:

Die SPG Mitteilungen erscheinen ca. 2 mal jährlich und werden an alle Mitglieder sowie weitere Interessierte abgegeben.

Verlag und Redaktion:

Schweizerische Physikalische Gesellschaft

Klingelbergstr. 82, CH-4056 Basel

sps@unibas.ch, www.sps.ch

Redaktionelle Beiträge und Inserate sind willkommen, bitte wenden Sie sich an die obige Adresse.

sc | nat 

Member of
the Swiss Academy of Sciences

SATW

Schweizerische Akademie der Technischen Wissenschaften
Académie suisse des sciences techniques
Accademia svizzera delle scienze tecniche
Swiss Academy of Engineering Sciences