



**MaNEP News** – page 2

**MaNEP Site Review 2008**

The annual SNF audit of our NCCR by international experts took place on May 20 and 21, 2008. The results of discussions were most encouraging, as you can read in Professor Fischer's edito.



MaNEP management with the 2008 Review Panel :  
from left to right, Oystein Fischer, Stefan Bachmann, Paul Leiderer, Christoph Renner, Darrell Schlom , Dirk van der Marel, David LARBALÉSTIER, Bernard RAVEAU, Prof. Tord CLAESON, Dieter VOLLHARDT, Guy DEUTSCHER, Felix GREUTER (copyright MaNEP, 2008)

**MaNEP Doctoral Programme-Geneva launched**

The first recruitment of PhD students for MaNEP's recently launched Doctoral Programme took place last February. 44 candidates sent their files, among which 7 (incl. 5 from abroad) have been retained and will be interviewed this month. A second recruitment will be organised next fall. Dr Christophe Berthod, who is responsible for the project, says he noticed a strong interest from students coming from the so-called 'emerging countries' : China, India, Pakistan, Russia, Irak, Iran, etc.

**>> MaNEP Doctoral Programme-Geneva**

For further inquiries, please contact : [christophe.berthod@physics.unige.ch](mailto:christophe.berthod@physics.unige.ch)

**Excellent media coverage for discovery on improper ferroelectricity**

A Press Conference was organised at the University of Geneva on April 17, 2008, to communicate important new results on improper ferroelectricity by Prof. Jean-Marc Triscone's group and a team in Belgium. These results were published in the April 10's edition of Nature magazine. The Press Conference was a big success and produced a large coverage on the Swiss TV, radio and papers (find the links on MaNEP's website : [www.manep.ch](http://www.manep.ch)).

Nature Vol 452| 10 April 2008|  
PDF : [www.nature.com](http://www.nature.com)  
>> [Press release](#)

**Super success for MaNEP at CERN... we'll be back in October**



The new MaNEP levitating scooter was a hit ! (copyright MaNEP, 2008)

Over 76'000 visitors gathered at CERN for the LHC Open Days that took place on April 5 and 6, 2008. A large proportion of them paid a visit to MaNEP and enjoyed the superconductivity experiments offered, as well as the Mix&Remix exhibition and the movie. The new levitating scooter was a hit. MaNEP will be back to CERN from October to December 2008 as a partner in a new PR operation called « Supermatériaux » (Supermaterials). Again, workshops using MaNEP's devices will be proposed. Open Days report in the CERN Bulletin : <http://cdsweb.cern.ch>

**Prof. Renner films science clip for the Swiss TV**

The Swiss TV (TSR) recently filmed the 3rd series of its science programme called « Histoires des Savoirs » (Stories of knowledge) consisting of daily 3-minutes movies on selected scientific topics. After going through a casting process, MaNEP's deputy director Prof. Christoph Renner was chosen to film an episode about nanomaterials that will be aired next September. It is the 2nd time a MaNEP member participates: Dr Céline Lichtensteiger filmed an episode on « Nanotechnologies ». View it here : [www.tsr.ch](http://www.tsr.ch)

**FNS media training**



What does a journalist expect from me? How do I formulate my message? How can I prepare myself for an interview? Do I have the right to read the article before it is

published? When dealing with journalists certain special rules apply. If you are familiar with these rules, it will be easier to obtain a public hearing. For this reason, the SNSF offers special media training courses for scientists. The two-day practice-orientated course block offers lots of opportunity to gain experience in front of the camera.

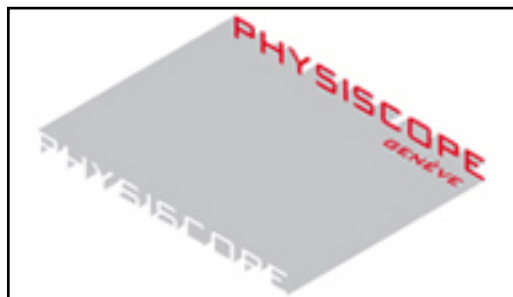
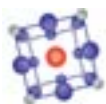
**In Lausanne in French** ( brochure : [www.snf.ch](http://www.snf.ch)):

5-6 septembre 2008  
26-27 septembre 2008

**In Lucerne, in German** (brochure : [www.snf.ch](http://www.snf.ch)) :

7-8 mars 2008  
12-13 septembre 2008  
21-22 novembre 2008

**Contacts :**  
[mediatraining@snf.ch](mailto:mediatraining@snf.ch) (French)  
[medientraining@snf.ch](mailto:medientraining@snf.ch) (German)



## The PhysiScope-Geneva will be officially born in autumn

After over two years of preparation and months of testing, the PhysiScope-Geneva will be officially inaugurated next autumn in the presence of several Geneva officials.

By Prof. Christoph Renner & Dr Olivier Gaumer. Editing by Anne Rougemont

The PhysiScope-Geneva is an ambitious project that embodies MaNEP's vision of innovative communication tools. This unprecedented initiative was developed in partnership with the Physics Section of the University of Geneva. The goal is to contribute in rekindling the interest for science among the youngsters of Geneva and surroundings via an original and hands on discovery of physics.

The first step in this new approach was the collaboration with a team from the Design Dpt of the Swiss TV (Télévision Suisse Romande) who brought their know-how in visually valorizing contents and creating sets. Hence the Physiscope also features state-of-the-art audiovisual equipment, along with a range of custom designed physics experiments. But the visual quality was only one in three key basic requirements of the project.

### Playful approach, rigorous contents

The second one implied a daring and humorous staging which turns the visit more into an interactive show. Still the scientific contents presented remain rigorous and precise.

The third point was that the PhysiScope should not only transport the participants into the heart of physics in a different and playful way, but also introduce them to current scientific challenges. The shows are thus designed to establish a connection from simple physics concepts to modern research carried out at MaNEP and the Physics Section in Geneva.

Visitors spend about an one hour at the PhysiScope. On request, they are also given the opportunity to see labs. Shows on selected topics are developed in collaboration with two junior high school and two high school teachers who are partially discharged of their teaching tasks by the Geneva Education Dpt, which support the project.



Discovering physics via a playful 'hands on' approach.

### 280 students during the testing phase

Target audiences for now are junior high school and high school students from Geneva, the rest of Switserland and abroad. So far, over 280 students (20 classes) enjoyed a show during the testing phase that started in October 2007.

We also had the pleasure to welcome the H. Dudley Wright and E. Boninchi Foundations which – like the Geneva Faculty of Science - support this endeavor financially, as well the director of the Télévision Suisse Romande Mr Gilles Marchand with his Production Dpt team and, most recently, the Academic Society of Geneva. Feedbacks from all these visitors are extremely positive.

The PhysiScope will be inaugurated during the autumn through an official ceremony where its spectacular experiments will be presented.



## Nature

### Improper ferroelectricity in perovskite oxide artificial superlattices



By Eric Bousquet, Matthew Dawber, **Nicolas Stucki (picture/UniGE)**, Céline Lichtensteiger, Patrick Hermet, Stefano Gariglio, Jean-Marc Triscone &

Philippe Ghosez.

Nature, Vol 452 / 10 April 2008 [ [PDF](#) ]

## Nature Physics

### Conditional statistics of electron transport in interacting nanoscale conductors



By **Eugene V. Sukhorukov (picture / UniGE)**, Andrew N. Jordan, Simon Gustavsson, Renaud Leturcq, Thomas Ihn, Klaus Ensslin.

Nature Physics 3, 243 - 247 (2007) [ [PDF](#) ]

## Physical Review Letters

### Giant Room-Temperature Piezoresistance in a Metal-Silicon Hybrid Structure



By A. C. H. Rowe, A. Donoso-Barrera, **C. Renner (picture/UniGE)**, S. Arscott.

PRL 100, 145501 (2008) - [ [PDF](#) ]

This article has also appeared in Physics News : [ [link](#) ]

## Universal Optical Conductance of Graphite



By **A. B. Kuzmenko (picture/UniGE)**, E. van Heumen, F. Carbone, and D. van der Marel.

Phys. Rev. Lett. 100, 117401 (2008) –

[ [PDF](#) ]

## Depth-Dependent Spin Dynamics of Canonical Spin-Glass Films: A Low-Energy Muon-Spin-Rotation Study



By **E. Morenzoni (picture/PSI)**, H. Luetkens, T. Prokscha, A. Suter, S. Vongtragool, F. Galli, M. B. S. Hesselberth, N. Garifianov, and R.

Khasanov.

Phys. Rev. Lett. 100, 147205 (2008) – [ [PDF](#) ]

## Quantum Magnets under Pressure: Controlling Elementary Excitations in $\text{TiCuCl}_3$



By Ch. Ruedg, B. Normand, M. Matsumoto, **A. Furrer (picture ETHZ and PSI)**, D. F. McMorrow, K.W. Krämer, 6 H. -U. Güdel, S. N.

Gvasaliya, H. Mutka, and M. Boehm.

PRL 100, 205701 (2008) – [ [PDF](#) ]

## Surface of strontium titanate



By R. Herger, **P.R. Willmott (picture/PSI)**, O. Bunk, C.M. Schlepuetz, B.D. Patterson, and B. Delley.

PRL 98, 076102

(2007) – [ [PDF](#) ]

## Structural Basis for the Conducting Interface between $\text{LaAlO}_3$ and $\text{SrTiO}_3$

**P. R. Willmott (previous picture/PSI)**, S. A. Pauli, R. Herger, C. M. Schlepütz, D. Martoccia, B. D. Patterson, By B. Delley, R. Clarke, D. Kumah, C. Cionca, and Y. Yacoby.

PRL 99, 155502 (2007) – [ [PDF](#) ]

## Physical Review B

### Pressure-induced variation of the ground state of $\text{CeAl}_3$



By **M. Weller (picture/ETHZ)**, J. L. Gabilano, A. Sacchetti, and H. R. Ott.

Phys. Rev. B 77, 132402 (2008) –

[ [PDF](#) ]

### Cu NMR and NQR evidence for an unusual spin dynamics in $\text{PrCu}_2$ below 100 K



By **A. Sacchetti (picture/ETHZ)**, M. Weller, J. L. Gabilano, R. Mudliar, B. Bedrini, K. Magishi, H. R. Ott, R. Monnier, B. Delley, and Y. Onuki

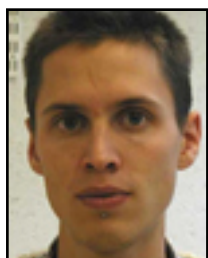
Physical Review B 77, 144404 (2008) – [ [PDF](#) ]



## Physical Review B (cont.)

### Effect of oxygen-doping on $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10+\delta}$

vortex matter: Crossover from electromagnetic to Josephson interlayer coupling



By **A. Piriou (picture/UniGE)**, Y. Fasano, E. Giannini, and Ø. Fischer

Phys. Rev. B 77, 184508 (2008) – [ [PDF](#) ]

This article has also been selected for the Virtual Journal of Applications of Superconductivity : <http://scitation.aip.org>

### Surface structure of $\text{SrTiO}_3$ (001)



By R. Herger, **P.R. Willmott (picture/PSI)**, O. Bunk, C.M. Schlepuetz, B. D. Patterson, B. Delley, V.L. Shneerson, P. F. Lyman, and D.K. Saldin.

Phys. Rev. B 76 195435 (2007) – [ [PDF](#) ]

### Structure determination of monolayer-by-monolayer grown $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ thin films and the onset of magnetoresistance

By R. Herger, **P. R. Willmott (previous picture/PSI)**, C. M. Schlepütz, M. Björck, S. A. Pauli, D. Martoccia, B. D. Patterson, D. Kumah, R. Clarke, Y. Yacoby, and M. Doebeli.

Phys. Rev. B 77 085401 (2008) – [ [PDF](#) ]

## Journal of Physics

### Unveiling new systematics in the self-assembly of atomic chains on $\text{Si}(111)$



By **C. Battaglia (picture/UniNE)**, H. Cercellier, C. Monney, L. Despont, M.G. Garnier, P. Aebi.

J. Phys.: Conf. Ser. 100, 052078 (2008) –

[ [PDF](#) ]

## Superconductor Science and Technology

### Optimization of $\text{Nb}_3\text{Sn}$ and $\text{MgB}_2$ wires



By **R. Flükiger (picture/UniGE)**, C. Senatore, M. Cesaretti, F. Buta, D. Uglietti and B. Seeber.

Supercond. Sci. Technol. 21 (2008)

054015 – [ [PDF](#) ]

## Z Kristallographie

### Neutron photocrystallography: simulation and experiment



By **J. Schefer (picture/PSI)**, D. Schaniel, Th. Woike and V. Petricek.

Z. Kristallographie, Volume 223,4-5 (2008) 259-264 – [ [PDF](#) ]

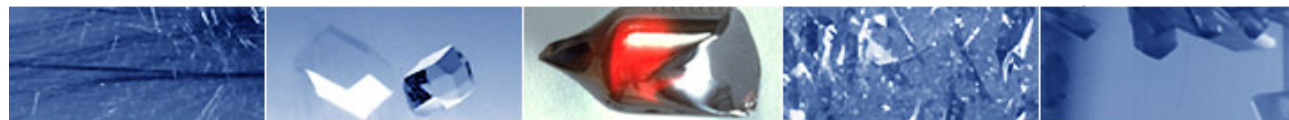
### Local lattice structure change in $\text{PrNiO}_3$ across the metal-insulator transition: X-ray absorption near-edge structure spectroscopy and ab initio calculations



by M. Acosta-Alejandro, J. Mustre de León, **M. Medarde (picture/PSI)**, Ph. Lacorre, K. Konder, P. A. Montano.

PHYSICAL REVIEW B 77, 085107 (2008) – [ [PDF](#) ]

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Nr. 17 / June 2008

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**Editorial / High hopes for the third phase and the PhysiScope**



By Prof.  
Oystein  
Fischer

This academic year ends on a very positive note.

The meeting with the review panel on May 20 and 21 went very well, thanks to all your efforts. Although we shall only receive the written report in a month or two, oral statements by the panel after the meeting made it clear that they strongly support our request for a third phase from July 1<sup>st</sup>, 2009.

This is of course an excellent basis for the elaboration of the final proposal.

This issue also sets a focus on

the *PhysiScope* (former working title: *Physics Park*) an original joint outreach effort towards junior high school and high school students by MaNEP and the Physics Dpt at UniGE.

Even before its official inauguration that will take place during the autumn (September or October), the *PhysiScope* encounters a huge success. Some 280 students have already enjoyed one show in the testing phase that will end this month. Requests for visits are even coming from abroad. The project is receiving funds from private foundations and I would especially like to thank the Wright Foundation and the Boninchi Foundation for their generous support from the start.

We shall of course keep you all posted as soon as a date for the official ceremony is settled.

The *PhysiScope* is presently operating in Geneva, but if other member institutions are interested in setting up a similar project, the MaNEP team will be glad to help (contact Mrs Anne Rougemont, our Communication Officer : [anne.rougemont@manep.ch](mailto:anne.rougemont@manep.ch)).

Until then, I wish you all a great summer, both for science and holiday !

**Reminder / MaNEP Summerschool... in winter !**



The new early start of the academic year at UniGE, since 2007, has forced MaNEP to switch from a Summer - to

a Winterschool. Thus, instead of the expected 2008 Summer School, we shall have a 2009 Winterschool , from January 11 to 16, still in Saas Fee.

Ski lovers will enjoy the news... More info coming soon via mail and the next issue of the e-News.



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*MaNEP is a long term research programme which gathers 250 scientists from Swiss universities and industry to study new electronic materials which are at the forefront of future technologies.*

MaNEP is hosted by the



MaNEP is a research instrument of the



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## Calendar

### SPS 100th Anniversary Celebration

June 27, 2008 at 16h45

Kultur-Casino, Berne



« Succeed in Science » - Ceremony and Physics Fair  
Kultur-Casino [ [PDF](#) ]

More info : <http://www.sps.ch/en/home/>

### 7th PSI Summer School on Condensed Matter Research

August 16-22, 2008

Lyceum Alpinum , Zuoz ,Switzerland

Topic : "Probing the Nanometer Scale with Neutrons, Photons and Muons"

<http://num.web.psi.ch/zuoz2008>

### International Conference on Highly Frustrated Magnetism

September 7-12, 2008

Braunschweig, Germany

More info : <http://www.hfm2008.tu-bs.de>

### 2008 Villa Conference on Complex Oxide Heterostructures (VIC-COH)

November 2-6, 2008

Orlando Florida

Call for abstracts : deadline on July 10, 2008.

More info : <http://sites.google.com/site/coh>