Second Announcement

# Call for the Papers

# *"Channeling 2004"*

**Workshop on Charged and Neutral Particles**

**Channeling Phenomena**

**Frascati (Rome), Italy**
**November 2 - 6, 2004**

(http://www.lnf.infn.it/conference/channeling2004)

Organized by

**Istituto Nazionale di Fisica Nucleare – Laboratori Nazionali di Frascati**

In cooperation with and sponsored by

**ISMN CNR** - Institute of Nanostructured Materials
**SPIE** – The International Society for Optical Engineering
**UNISANTIS S.A.**, Switzerland

## Objectives and scopes

Since the middle of the last century, Frascati's National Laboratories (LNF - INFN) are well known in the world for pioneering research in the particle interaction and synchrotron radiation physics fields. Good experience in designing accelerators, storage rings and beamlines for synchrotron radiation allows presently to the LNF to be in the frontier for the construction of new X-ray generation sources, as FEL.

Interaction of different kinds of radiation with matter is being studied since scientific community started to operate with penetrating radiations. Among different research directions, the coherent phenomena of the radiation passage through solids, as channeling in crystals, attracts attention because it can create a strong flux of photons in various energy intervals, starting from optical frequencies, via soft and hard X-ray, up to $\gamma$-ray frequencies. The latter makes this field of research more and more attractive, due to the importance of creating new intensive photon sources like the next generations of synchrotron, free-electron laser, Z-pinch machines, etc. Another approach to the problem of searching for intensive radiation sources is to increase the radiation density of existing X-ray and $\gamma$ sources that can be solved by means of novel optical elements, for instance polycapillary optics. The passage of charged particles through periodic systems and the passage of neutral particles (photons, neutrons) through capillary systems, even if strongly different by nature, have much in common, as both can be described within the frame

of channeling theory. Therefore, the use of this analogy can significantly simplify researches in both areas.

The main purpose of "Channeling 2004" workshop is to discuss results and to exchange experiences and ideas among various groups in the world, such as to lay the basis for future research activities, and to prepare a new International network project on Coherent Scattering Phenomena for Radiations in Solids.

## Topics for discussion

- Radiation of relativistic charged particles in periodic structures
- Coherent scattering of electrons and positrons in crystals
- Channeling radiation of electrons and positrons in crystals
- Channeling of X-rays and neutrons in capillary systems (micro- and nano-channeling)
- Novel types of sources for electromagnetic radiation (FEL, powerful X-ray sources)
- Applications of channeling phenomena (novel radiation sources, X-ray waveguides, capillary/polycapillary optics)

## International Advisory Committee

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## Speakers

- **Jens Ulrik Andersen, Insitute of Physics and Astronomy, Aarhus, Denmark**
- **Xavier Artru, Institut de Physique Nucléaire de Lyon, France**
- **Robert Avakian, Yerevan Physics Institute, Yerevan, Armenia**
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- **Sergey Gus'kov, P.N. Lebedev Physics Institute, Moscow, Russia**
- **David Hammer, Cornell University, Ithaca, USA**
- **Fadei Komarov, Belarus State University, Minsk, Belarus**
- **Muradin Kumakhov, Institute for Roentgen Optics, Moscow, Russia**
- **Luigi Palumbo, University of Rome "La Sapienza", Rome, Italy**
- **Anand Pathak, University of Hyderabad, Hyderabad, India**
- **Natalya Polukhina, P.N. Lebedev Physics Institute, Moscow, Russia**
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- **Andrey Solov'yov, Institute for Theoretical Physics GU, Frankfurt am Main, Germany**
- **Litizia Terranova, University Tor Vergata, Rome, Italy**
- **Christos Trikalinos,** University of Athens, Athens, Greece
- **Herbert Uberall, Catholic University of America, Washington, USA**
- **Wolfgang Wagner, Institute of Nuclear and Hadron Physics, Dresden, Germany**
- **Nikolai Zhevago, RRC "Kurchatov Institute", Moscow, Russia**
- **Zhiyuan Zhu, Shanghai Institute of Applied Physics, Shanghai, China**

## Technical Program, Abstracts and Proceedings

**The workshop program will include invited presentations by the experts in the field of particle channeling physics, powerful X-ray sources and FEL physics, selected oral presentations, and poster sessions.**
**Each author is requested to submit a camera-ready copy of an abstract of his paper in English not later June 20. Authors are kindly required to follow *the guidelines for Abstracts of Oral or Poster Contributions* (download abstract template – http://www.lnf.infn.it/conference/channeling2004/abstract_template.doc) (a template file is presented at the end of the announcement).**

**Abstracts of all accepted papers (both oral and poster) will be published in the Advanced Program and distributed to all participants at registration. Post deadline abstracts will not be published. All the papers will be published in the SPIE (http://www.spie.org/) Proceedings Series as a special issue (the guidelines for Manuscript preparation will be published on the workshop web page). The deadline for the manuscript submission is September 30.**

**For further information or questions do not hesitate contacting the organizing committee by channeling2004@lnf.infn.it**

## Exhibition

**During the workshop, an exhibition, including new X-ray instruments and devices recently developed by UNISANTIS SA (Switzerland) will be organized.**
**Limited space will be available for the exhibition of small equipments, leaflets and books. Interested companies should contact the workshop secretariat (channeling2004@lnf.infn.it). Further instructions will be continuously provided.**

**Please contact the secretariat (channeling2004@lnf.infn.it) if you would need further information.**

## Registration & Fee & Accommodation

**A registration fee of 300 Euro, to be paid only cash at the Registration Desk (no advance payment, no checks, no credit cards), includes bus service "hotels-LNF-hotels", lunches and coffee breaks for 3 days, welcome party (Tuesday evening), a social dinner, and an excursion. Registration can be done on-line visiting the workshop site (http://wwwsis.lnf.infn.it/channelling04/registration.htm). The deadline for the registration is October 10.**

**A special accommodation rate has been arranged with the Workshop's Hotels (http://www.lnf.infn.it/conference/2004/channeling/hotels.html). Participants are kindly asked to book hotels by themselves. The accommodation will be for 4-5 nights (arrival on Tuesday, departure on Saturday-Sunday), breakfast included. Please, note that this offer is valid only for a limited number of rooms: all the interested participants are strongly encouraged to make reservation as soon as possible.**

**Reservation can be also done contacting other hotels from the list, which is available through the page http://www.lnf.infn.it/lnfadmin/travel/alberghi.html.**

**Hotel reservation and registration for the workshop should be done separately.**

**For logistic reasons, we kindly ask you to inform the Secretariat if you have made hotel reservation, sending a message by channeling2004@lnf.infn.it.**

## Important date deadlines

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|---|---|
| **Abstract submission** | **September 20, 2004** |
| **Abstract acceptance** | **September 30, 2004** |
| **Manuscript submission** | **October 31, 2004** |
| **Registration for the workshop** | **October 10, 2004** |
| **Hotel reservation** | **preferable before September 15, 2004** |

## Venue

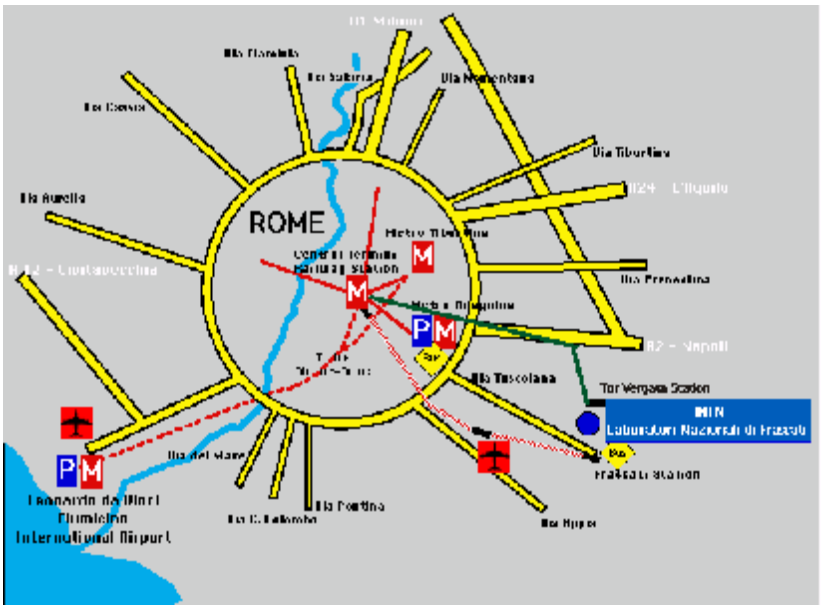
**Frascati (~ 20 km to south of Rome) is a famous and popular town of the "Castelli Romani" well known for its beautiful villas and quality wines. Sited on wide terraces, it forms a balcony to the plain leading towards Rome, offering wide panoramic views stretching from the Tyrrhenian Sea to the Sabine mountains. The town originated in the first few centuries of our ear amides the ruins of Roman patrician villas. Its healthy climate and closeness to Rome has meant that Frascati has always been a centre of attraction for both Italian and foreign tourists.**

**Famous research centers placed here lend Frascati an international importance. Frascati houses the most important scientific centers in Italy that found here calm and peace only a few minutes from Rome.**

How to get to the workshop

**The "Channeling 2004" workshop will be held at Frascati's National Laboratory (LNF). To get LNF, please, follow the instructions below.**

**By Airplane**
**From Leonardo da Vinci Airport at Fiumicino you can take a taxi (only licensed white cabs are recommended) to Frascati (~ 30 km distance).**
**You can also take the train from Fiumicino Airport to "Roma Termini" (http://www.lnf.infn.it/lnfadmin/travel/fiumicino.html) railway station, or from Fiumicino to the other railway Stations (http://www.lnf.infn.it/lnfadmin/travel/fiuorario1.html).**
**By Train**
**From Roma Termini railway station, you can take the train Roma-Cassino and get off at "Tor Vergata" (http://www.lnf.infn.it/lnfadmin/travel/orarifs.html#torvergata) (about 20 minutes) which is about 200 m. from LNF, or the train to Frascati (http://www.lnf.infn.it/lnfadmin/travel/orarifs.html) (it stops about 2 km far from LNF, it is possible to take a taxi to LNF).**
**You can also take the Underground ("linea A") from Roma Termini to Anagnina Station, then the bus to Frascati.**
**By Bus**
**There is a bus service (ENEA/INFN) from Rome to LNF only during working days (from Monday to Friday). Time Table (http://www.lnf.infn.it/lnfadmin/travel/oraribus.html) and Route.**
**By Car**
**You can take the ring highway "Grande Raccordo Anulare", Exit 21-22 (see map http://www.lnf.infn.it/lnfadmin/general/roma.gif), then the state highway "Tuscolana" to Frascati (http://www.lnf.infn.it/lnfadmin/general/frascati.gif).Turn left (via E. Fermi) at the traffic-lights after Villa Mercede Hotel**



Contacts

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*Instructions to Authors of Abstracts for Oral or Poster Contributions:*

## The Title is Written in Bold, Times New Roman 12, Centered

Authors are cited in Times New Roman 12, centered: Author xxx, Author yyy*
Institute or laboratory: Times New Roman 10, centred: xxx, *yyy

There must be one blank line between the title, the authors' names and their affiliation and two blank lines between the affiliation and the beginning of the body text without any punctuation mark at the end of these lines. Authors and affiliation must not exceed one line each. The name of the corresponding author is underlined.

All abstracts must be written in English and occupy a maximum of 1 page A4 written in Times New Roman 12, alignment in mode "justify". Please make sure to respect the following margins: top, bottom, right: 25 mm; left: 30 mm.

Reference citations [1] are shown in the text by a number in brackets and follow one double space below the body text under the heading "References".

No figures, images or photos have to be included in the abstract.

In order to ensure a smooth abstract booklet preparation, please do not insert text or references in "footnote" mode or other encoding.

For further information or questions do not hesitate contacting the congress organization at channeling2004@lnf.infn.it

**References**

[1] The heading "References" follows one double space below the body text in Times New Roman 10 bold. Reference citations are shown in the text by a numeral in brackets and cited under the heading "References".

[2] L.J. Marshal, and G. Talleni, Phys. Rev. A **43** (2001) 5897.

*(IMPORTANT: Please save and submit the abstract under your family name typed in small letters, e.g. abstract **smith_james.doc** submitted by James Smith).*