

Channeling series:
flash on 7 years

channeling 2004



SCOPE
TOPICS AND SPEAKERS
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EXHIBITION
PROCEEDINGS
IMPORTANT DATES
REGISTRATION AND FEES
ACCOMMODATION
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Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali di Frascati
INTERNATIONAL WORKSHOP
Charged and Neutral Particles Channeling Phenomena

Meeting Photos

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"Channeling 2004"

Workshop on Charged and Neutral Particles
Channeling Phenomena
Frascati (Rome), Italy
November 2-6, 2004

Organized by
Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali di Frascati

In cooperation with and sponsored by
SPIE - The International Society for Optical Engineering
UNISANTIS S.A., Switzerland
ISMN CNR - Institute of Nanostructured Materials



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FRASCATI autumn

Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali di Frascati

Channeling 2004



Workshop on Charged and Neutral Particles
Channeling Phenomena

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



In cooperation with and sponsored by
ISMN CNR - Institute of Nanostructured Materials
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UNISANTIS S.A., Switzerland

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 Board

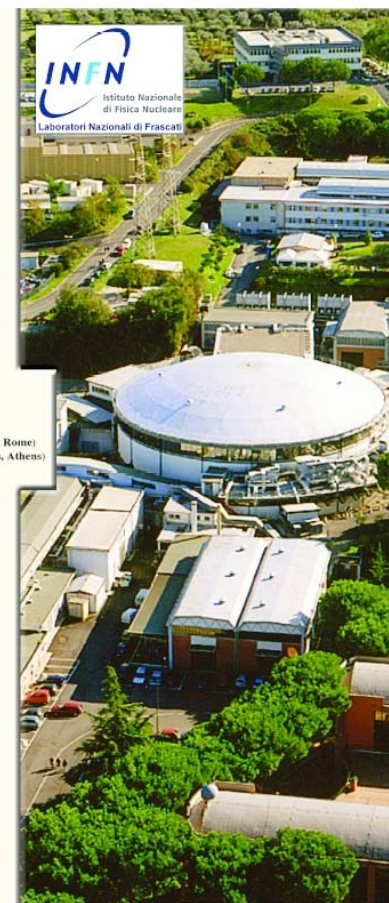
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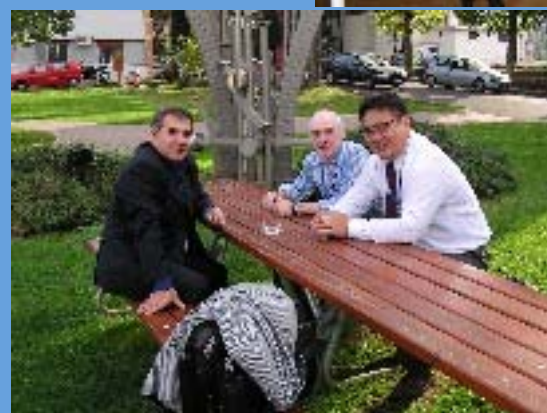


more than 70 participants



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>>> 2004 >>>



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About 80 abstracts

More than 50 contributions issued
In Procs.

PROCEEDINGS OF SPIE

***International Conference on
Charged and Neutral Particles
Channeling Phenomena***


Sultan B. Dabagov
Editor

2-6 November 2004
Rome, Italy

Organized by
Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Frascati (Italy)

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Published by
SPIE—The International Society for Optical Engineering

Volume 5974
 The International Society
for Optical Engineering

channeling 2006



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PROGRAM
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PROCEEDINGS
ACCOMMODATION
PARTICIPANTS
DOWNLOADS
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CONTACTS



TOP

International Conference
on
Charged and Neutral Particles Channeling Phenomena
3 - 7 July 2006, Frascati (Rome), Italy

"Channeling 2006"

...IN PICTURES...

International Conference on
Charged and Neutral Particles Channeling Phenomena
3 - 7 July 2006, Frascati (Rome), Italy

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and
under the high sponsorship of
Comune di Frascati

The "Channeling" (International Conference on Charged and



Frascati:
History and Culture
Wine and Science

>>> 2006 >>>

FRASCATI summer



more than 90 participants:
More than 100 abstracts

Proc. SPIE 6634 (2007)
International Conference on
Charged and Neutral Particles
Channeling Phenomena II

More than 60 papers

INFN "Channeling 2006"
Istituto Nazionale di Fisica Nucleare
Laboratori Nazionali di Frascati

International Conference on Charged and Neutral Particles Channeling Phenomena
INFN - Laboratori Nazionali di Frascati
July 3-7, 2006 Frascati (Rome), Italy

Topics

- Coherent scattering of relativistic charged particles in matter;
- Radiation of relativistic charged particles in periodic structures (coherent bremsstrahlung, channeling radiation, resonant transition radiation, diffraction radiation, parametric X-ray radiation, LPM effect);
- Crystal channeling, volume capture and crystal reflection of positive ions: theory and experiments; crystal assisted collimation in hadron colliders: proposals and experimental observations;
- Channeling of radiations in capillary systems (micro- and nano-channeling, nanotubes, nanoporous);
- Novel types of sources for electromagnetic radiation (FEL, Thomson & Compton scattering, laser plasma acceleration);
- Applications of channeling phenomena (bending of the beams, positron sources, ion channeling applications, powerful radiation sources, X-ray waveguides, capillary/polycapillary optics, novel X-ray table-top instruments).

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>>> 2006 >>>

FRASCATI summer



>>> 2008 >>>

ERICE autumn



INFN ELOISATRON Project
The 51st Workshop
Charged and Neutral Particles
Channeling Phenomena
25 October - 1 November 2008
Erice (Trapani), Italy

Director of the Project:
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Channeling 2008

Workshop in Pictures

INFN ELOISATRON PROJECT
The 51st Workshop
"Channeling 2008"
Charged and Neutral Particles Channeling Phenomena
October 25 - November 1, 2008
Erice (Trapani - Sicily), Italy

organized by
Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali di Frascati

in cooperation with
HADRON PHYSICS J3 - EU Project
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LPI RAS - P.N. Lebedev Physical Institute RAS, Russia

The "Channeling" (International Conference on Charged and Neutral Particles Channeling Phenomena) series are the conferences devoted to new developments in the field of coherent and incoherent scattering of hadrons and leptons (protons, ions, electrons, muons and related antiparticles) in solid structures of various periodicities from the viewpoint of both fundamental studies

more than 110 participants:
140 abstracts

More than 80 contributions issued
proceedings

The 51st Workshop of the INFN ELOISATRON Project
Charged and Neutral
Particles Channeling Phenomena
25 October - 1 November 2008
Erice (Trapani), Italy

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Coherent scattering of relativistic charged particles in matter
Radiation of relativistic charged particles in periodic structures (coherent bremsstrahlung, channeling radiation, resonant transition radiation, diffraction radiation, parametric x-ray radiation, LPM effect)
Crystal channeling, volume capture and crystal reflection of positive ions; crystal assisted collimation in hadron colliders
Channeling of radiations in capillary systems (micro- and nano-channeling, nanotubes, nanoporous)
Novel powerful radiation sources (FEL, Thomson scattering, laser plasma acceleration)
Applications of channeling phenomena (bending of the beams, positron sources, x-ray waveguides, capillary/polycapillary optics, novel x-ray table-top instruments)



>>> 2008 >>>

ERICE autumn





>>> 2008 >>>

ERICE autumn

Book of abstracts:
all submitted contributions
– more than 80

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International Journal of Modern Physics A (IJMPA)

Particles and Fields; Gravitation; Cosmology; Nuclear Physics

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Volume: 25, Issue: supp01 (June 2010)

SUPPLEMENTARY ISSUE: Charged and Neutral Particles Channeling Phenomena, Selected Papers from the Proceedings of the 51st Workshop of the INFN ELOISATRON Project, Erice, Italy, 25 October–1 November 2008; Editors: S. B. Dabagov and L. Palumbo

ON THE DISCOVERY OF COHERENT BREMSSTRAHLUNG IN A SINGLE CRYSTAL AT THE FRASCATI NATIONAL LABORATORIES

G. BARBIELLINI, G.P. MURTAS and S.B. DABAGOV

DOI No: 10.1142/S0217751X10049876

Page: 1-8

[Abstract](#) | [Full Text \(PDF, 406KB\)](#) | [References](#)

ADVANCES IN COHERENT BREMSSTRAHLUNG AND LPM-EFFECT STUDIES

N. F. SHUL'GA

DOI No: 10.1142/S0217751X10049888

Page: 9-33

[Abstract](#) | [Full Text \(PDF, 1627KB\)](#) | [References](#)

SPECTRA OF RADIATION AND CREATED PARTICLES AT INTERMEDIATE ENERGY IN ORIENTED CRYSTAL TAKING INTO ACCOUNT ENERGY LOSS

V. N. BAIER and V. M. KATKOV

DOI No: 10.1142/S0217751X1004989X

Page: 34-46

[Abstract](#) | [Full Text \(PDF, 1244KB\)](#) | [References](#)

COHERENT PAIR PRODUCTION IN CRYSTALS IN PRESENCE OF ACOUSTIC WAVES

A. R. MKRTCHYAN, A. A. SAHARIAN and V. V. PARAZIAN

DOI No: 10.1142/S0217751X10049906

Page: 47-54

[Abstract](#) | [Full Text \(PDF, 891KB\)](#) | [References](#)

NEGATIVE PARTICLE PLANAR AND AXIAL CHANNELING AND CHANNELING COLLIMATION

Dabagov
Palumbo

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Proceedings of the 51st Workshop
of the INFN ELOISATRON Project

CHARGED AND NEUTRAL PARTICLES CHANNELING PHENOMENA

Channeling 2008



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Intern Journal of Modern Physics
A25 (10 Suppl. 1) (2010) 223 pp.

20 selected papers



>>> 2010 >>>

FERRARA autumn

$f(\mathbf{k}) = 4\pi Z e \sum_{j=1}^N a_j \exp i \mathbf{k} \cdot \mathbf{r}_j$

$U(r) = \sum_{j=1}^N V(r - r_j)$

$U(r) = (1/6) U_0$

$r = \text{distance } \rho$

$f_0(\rho) = \text{mod. } \rho$

Norm count

Ch 2

$\left[\frac{\partial^2}{\partial x^2} + U(x) \right] \psi(x) = E \psi(x)$

"Channeling 2010"

4th International Conference

Charged and Neutral Particles Channeling Phenomena

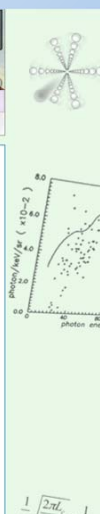
October 3 - 8, 2010
Ferrara (FE), Italy

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Coherent scattering of relativistic charged particles in matter
Radiation of relativistic charged particles in periodic structures (coherent bremsstrahlung, channeling radiation, resonant transition radiation, diffraction radiation, parametric x-ray radiation, LPM effect)
Crystal channeling, volume capture and crystal reflection of positive ions: theory and experiments; crystal assisted collimation in hadron colliders
Channeling of radiations in capillary systems (micro- and nano-channeling, nanotubes, nanoporous)
Novel types of sources for electromagnetic radiation (FEL, Thomson scattering, laser plasma acceleration)
Applications of channeling phenomena (bending of the beams, positron sources, powerful radiation sources, x-ray waveguides, capillary/polycapillary optics, novel x-ray table-top instruments)

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wishing a fruitfull week...