The 6th International Conference

Channeling 2014 - Charged & Neutral Particles Channeling Phenomena
Capri (NA), Italy, October 5-10, 2014

organized by
Istituto Nazionale di Fisica Nucleare – Laboratori Nazionali di Frascati (INFN LNF)
and
European Organization for Nuclear Research (CERN)

in cooperation with and sponsored by
EPS - European Physical Society
SIF – Italian Physical Society
HadronPhysics3 – FP7 EU Project
SBAI, Sapienza University of Rome
RAS P.N. Lebedev Physical Institute
National Research Nuclear University MEPhI
Research Consortium “Hypatia”
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The international conferences "Charged & Neutral Particles Channeling Phenomena - Channeling", headed by the National Institute for Nuclear Physics (INFN) in collaboration with Italian and other world centres and research initiatives, are unique meetings devoted to the discussion on advances in physics of coherent/incoherent scattering of relativistic and nonrelativistic hadrons and leptons (protons, ions, electrons, muons and related antiparticles) in strong electromagnetic fields of various origins and structures, amorphous and crystalline, laser and plasma. The “Channeling” topics cover fundamental research aspects, from theoretical to experimental, together with several well-known techniques for applications in scientific instrumentation both for large-scale experiments at famous accelerator centres and for laboratory table-top studies. Channeling 2014 is being organized by INFN together with CERN – the European Organization for Nuclear Research where intense studies on the use of relativistic beams channeling for the beam collimation have been performing since long time.

Previous editions of the “Channeling” conferences, starting from Channeling 2004 and Channeling 2006 held at the National Laboratories of Frascati (LNF) and followed by Channeling 2008 (Erice), and Channeling 2010 (Ferrara), have demonstrated a growing interest of researchers involved in continuously reinforced collaboration programs, some of which boast more than 35 years of history. The last one, Channeling 2012 hosted by the Comune of Alghero, has featured more than 140 presentations, including invited lectures as well as oral and poster reports, by the researchers representing 17 countries from Europe, America and Asia. Since the first Channeling meeting we have prepared five books of proceedings. The proceedings of the Frascati conferences were published by SPIE - the International Society for Optical Engineering (Proc. of SPIE, Vol. 5974 and Vol. 6634 ), those of the Erice meeting by World Scientific as a special issue of "The Science and Culture Series - Physics". The Channeling 2010 proceedings were published by the Italian Physical Society as a special volume of Nuovo Cimento C, as well as, separately, in
form of a book "Channeling 2010". The main contributions to Channeling 2012 were issued as a dedicated volume of *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms*, and in addition as a book entitled “Channeling 2012”. The total number of published scientific papers in the conference proceedings since 2004 exceeds 300.

Each proceedings was dedicated to one well known physicist, who in the past strongly contributed to the research in some specific branches of the physics of beam interactions in intense electromagnetic fields, delivering new ideas and knowledge to the community. Namely, the aforementioned books were devoted to the memories of Hans A. Bethe, Mikhail L. Ter-Mikaelyan, Jens Lindhard, Vitaly L. Ginzburg, Vladimir N. Baier, and Giordano Diambrini Palazzi, respectively.

In 2012 “Channeling” Awards for significant contribution in channeling and related phenomena physics were introduced. The first award winners were Mikhail I. Ryazanov (MEPhi, Moscow), Richard A. Carrigan, Jr. (FNAL, Batavia), and Edward N. Tsyganov (UTSMC, Dallas).

The “Channeling” conference represents a tantalizing opportunity for the wide interdisciplinary community to gain information about present and future research projects in the field of relativistic/nonrelativistic beams and various radiations interaction in solids as well as radiation fluxes propagation in micro- and nanochannel structures of various origin and periodicity. In particular, this conference series has proven important both for experts and for young scientists with interest in undertaking new investigations following the foreseen development of next generation accelerators and photon sources, as well as an excellent opportunity for exploring and discussing new international initiatives in beams shaping/penetration science, such as channeling of beams/radiations and related studies.

We are looking for the widest possible participation in Channeling 2014 and, in particular, we are encouraging presentations and involvement of younger colleagues.

The conference scientific program will include invited talks, oral and poster presentations as well as informal discussion and round tables.

**Conference topics:**

- coherent scattering of relativistic charged particles in strong fields;
- relativistic and nonrelativistic crystal channeling, volume capture and volume reflection of hadron and lepton beams;
- electromagnetic radiation by relativistic charged particles in periodic structures (coherent bremsstrahlung, channeling radiation, transition radiation, diffraction radiation, parametric x-ray radiation, LPM effect, FEL, Compton/Thomson scattering);
- channeling of radiations in capillary systems (micro- and nano-channeling, nanotubes, nanoporous);
- novel techniques for beams handling and acceleration (plasma wake-fields, cross-laser fields, crystal assisted collimation, plasma-ion channels, ion/electron beams guiding phenomena);
- advanced x-ray & neutron optics (capillary/polycapillary optics, compound refractive optics, micro- and nanofocusing, waveguides);
- applications based on channeling phenomena (beams shaping, positron sources, powerful radiation sources, crystal-based nuclear fusion processes, diagnostic tools, novel x-ray table-top instruments, applications in material and biomedical studies).
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Technical Program, Abstracts, and Proceedings

The scientific program of the conference will include invited presentations by the experts in the field of the “Channeling 2014” topics, selected oral presentations, and poster sessions.

Each author is requested to submit a camera-ready copy of the abstract of his contribution in English by June 15 via e-mail channeling2014@lists.lnf.infn.it

Authors are kindly required to follow the guidelines for Abstracts of Invited, Oral or Poster Contributions in doc, LaTeX (preferable style) or pdf formats (look also at the end of this document); the templates of these formats are online available via the links on the page http://www.lnf.infn.it/conference/channeling2014/downloads.php. Please, save and submit the abstract under your family name typed in small letters, e.g. abstract_smith,*** submitted by Dr. Smith.

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.

The conference proceedings will be published as a special issue in one of the international referred journals. The deadline for the manuscript submission (about one month after the meeting) will be announced during the meeting, however, in order to shorten the proceedings preparation time the authors are requested to work in advance on the draft writing. For additional information, please, contact the Organizing Committee.
Registration & Fee & Accommodation

Participants are invited to register to the conference by filling in the online Registration Form (please, visit the official conference web site: [http://www.lnf.infn.it/conference/channeling2014/registration.php](http://www.lnf.infn.it/conference/channeling2014/registration.php)). The details of your participation should be reported on the registration form to be evaluated by the Organizing Committee and conference secretaries.

The conference fee:

<table>
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<tr>
<th>Payment</th>
<th>before July 15 /bank transfer/</th>
<th>after July 15 /bank transfer or cash at registration desk /</th>
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<tbody>
<tr>
<td>Participant</td>
<td></td>
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<tr>
<td>Regular</td>
<td>350 €</td>
<td>450 €</td>
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<tr>
<td>Student</td>
<td>200 €</td>
<td>300 €</td>
</tr>
<tr>
<td>Accompanying</td>
<td>100 €</td>
<td>100 €</td>
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includes the attendance of all conference sessions, technical and social, the publishing of the books of both abstracts and proceedings, etc. The advanced payment at earlier registration before July 15 allows the participants to have a reduced registration fee; this payment should be done via bank transfer addressed to INFN LNF with the following details:

INFN-LNF
Congressi e Foresterie INFN
IBAN IT31Q0200839105000102577662
code BIC-SWIFT: UNCRIT M 1385

Note/Important: “Channeling 2014” fee - Last Name/Name

Simultaneously, a pdf copy of the bank transfer should be sent to the Organizing Committee via e-mail channeling2014@lists.infn.it.

For INFN employees and associates the registration fee should be charged directly to their home INFN Site. Further detailed information on the payment procedure should to be requested to their administrative offices.

The Organizing Committee will consider granting limited number of students or young researchers. The interested persons should specify their requests compiling the field “Any other information or special requirements”.

Participants should arrange their own accommodation contacting the hotels directly quoting "Channeling 2014". All necessary information on the booking procedure is online published; please, follow the link for details: [http://www.lnf.infn.it/conference/channeling2014/accommodation.php](http://www.lnf.infn.it/conference/channeling2014/accommodation.php), and if necessary do not hesitate to contact the conference secretaries.

Important dates

<table>
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<tr>
<th>Event</th>
<th>Deadline</th>
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<tbody>
<tr>
<td>Abstract submission</td>
<td>by June 15</td>
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<tr>
<td>Abstract acceptance</td>
<td>by June 30</td>
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<tr>
<td>Hotel reservation</td>
<td>by July 15 (participants are requested to secure a room as soon as possible)</td>
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<tr>
<td>Registration:</td>
<td></td>
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<tr>
<td>early</td>
<td>by July 15</td>
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<tr>
<td>late</td>
<td>since July 16 by October 5</td>
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<tr>
<td>Manuscript submission</td>
<td>to be announced later (preferably by October 31)</td>
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Participants are invited to check periodically the update of the conference deadlines visiting the official web site.
How to get to the conference

Channeling 2014 will take place in the Capri town, the province of Naples, known as the island of the same name Capri.

The island of Capri is situated in the Bay of Naples, just a few sea miles away from Sorrento and the Amalfi Coast. Capri town is the lively part of the island, one of the most attractive cities in southern Italy. Since ancient times, known emperors and aristocrats, scholars and writers, actors and politicians prefer to relax in Capri plunged into weaving a romantic stroll through the narrow winding streets, shady gardens and parks, with washing the horizon seascape...

The meeting venue, the Hotel "La Residenza", is placed just near the main streets of Capri. A short walk brings you to the lovely world known sites with many interesting monuments, restaurants, and shops.

Getting to the island Capri (main indications)

If you land in Rome, you will need at least three hours to reach the port of Naples. Boats for Capri leave from the ports of Naples and Sorrento. There are two docks in Naples: Molo Beverello, for hydrofoils, and Calata di Massa, for ferries. Molo Beverello is situated directly opposite the city's Maschio Angioino castle, while Calata di Massa lies just slightly to the East (i.e. to your left when you face the sea).

If you arrive by plane...
The airport in Naples 'Capodichino' is just a few kilometres from the city.

- The ANM Company provides regular bus service (ALIBUS) from the airport to Piazza Municipio (Beverello Harbour).
- The taxi rank is just outside the terminal.

If you arrive by train...

Arriving at the Central Station of Naples (Napoli-Centrale):

- from Piazza Garibaldi take the tram (line 1) or the R2 bus to Piazza Municipio, located at few steps away from Beverello Harbour, the landing place of the hydrofoils and jetfoils (passenger-only service) for the islands in the Gulf of Naples.
- The taxi rank is outside the Central Station, near the ticket offices; the fare is computed and displayed by the taximeter; but the taxi can also offer a fixed price transfer (10 Euro), as fixed by the Town Council.

If you arrive by car...

Forget the car:

- from mid March to early November only residential cars and motorbikes are allowed to circulate on the island. In any case, a car is of little use on Capri, where the majority of roads are closed to traffic and there are very few places to park.
- Public transport on the island is extremely efficient and taxi-service is available 24 hours a day.

We suggest that you do not bring your car onto the island, since the roads suitable for vehicles are a few and narrow. If you want to park your car in Naples, you may choose one of the city car-parks.

Capri weather

Capri is typically characterized by mild climate. Better time to stay on the island is from April to October. The average temperature in October is about +21°C during the day and does not fall below 15°C at night.
Instructions to Authors of Abstracts for Oral or Poster Contributions:

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

Author a, Author b: Times New Roman 12, centered

a Institute: Times New Roman 10, centred
b Institute: Times New Roman 10, centred

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.

References
1. The heading “References” follows one double space below the body text in Times New Roman 10 bold.