The 7th International Conference

**Channeling 2016 – Charged & Neutral Particles Channeling Phenomena**

Sirmione – Desenzano del Garda, Italy,

September 25-30, 2016

organized by

Istituto Nazionale di Fisica Nucleare – Laboratori Nazionali di Frascati (INFN LNF)
European Organization for Nuclear Research (CERN)
National Research Nuclear University MEPhI

under high sponsorship by

EPS – European Physical Society
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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 2016 is being organized by INFN together with CERN – the European Organization for Nuclear Research and MEPhI – National Research Nuclear University where intense studies on interaction of relativistic particles interactions in crystals have been performing since long time.

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 2016 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;
- crystal channeling, volume capture and volume reflection of hadron and lepton beams;
- energetic ion interactions processes (backscattering and channeling of low energy ions, high energy ion channeling);
- 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 scattering);
- channeling of radiations in capillary systems (micro- and nano-channeling, micro-channel plates, nanotubes, nano-porous);
- novel techniques for beams handling and acceleration (plasma wake-fields, cross-laser fields, crystal assisted collimation, plasma-ion channels, capillary channeling);
- advanced x-ray & neutron optics (capillary/polycapillary optics, compound refractive optics, micro- and nano-focusing, waveguides);
- applications based on channeling phenomena (beams shaping, positron sources, powerful radiation sources, diagnostic tools, novel x-ray table-top instruments, channeling for advanced electronic materials studies, etc.).

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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 2016” topics, selected oral presentations, and poster sessions.

The conference will start with the Channeling Primer session together with the registration and followed at the end of the session by welcome mixer on Sunday afternoon September 25 at the conference hall PALACREBERG SIRMIONE (Piazzale Europe, 5, 25019 Sirmione - Brescia). The Primer session will include some formal greetings by the Organizers together with the officials of the Comune di Sirmione del Garda.

The participants are invited to take part in the mini-workshop on computer simulations guided by Profs. M. Breese and V. Guidi. The program of the workshop will be formed by selected reports to be delivered at dedicated sessions within the scientific program of Channeling 2016 (the details will be announced later on). The title and the abstract of the workshop are as follows:

Simulation Techniques for Particle Dynamics in Ordered Structures

The demand for more performing techniques to track the dynamics of particle in ordered structure is becoming even more impelling because of the new horizons for highest-energy particle steering. Monte Carlo simulation of particle dynamics in crystal is powerful tool for the design of crystals with optimized performance and to aid the analysis of experimental results. Current modeling of coherent interactions with the atoms of a crystal and of incoherent interaction with individual atoms need refinement and comparison with experimental observable. The workshop aims at highlighting the state of the art on simulation resources and its comparison with experimental results that could result to new proposals for dedicated experiments to focus on key parameters to improve simulation codes.

On Monday, September 26, morning the scientific program will start with a welcome by the officials of the Comune di Desenzano del Garda at SALA ACQUAVIVA of the HOTEL ACQUAVIVA DEL GARDA, and continue through the week with a mixture of oral and poster sessions, as well as specialized round tables. The program will continue until lunchtime Friday, September 30, and will be concluded by the closing session. After lunch on Wednesday, September 28, there will be an excursion, and the conference dinner is planned on Thursday, September 29 evening.

Each author is requested to submit a camera-ready copy of the abstract of his contribution in English by June 30 via e-mail channeling2016@lists.infn.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/channeling2016/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 in the Book of Abstracts, and distributed to all participants at registration. Post deadline abstracts will not be published.

The Channeling 2016 proceedings will be published as a special, but consecutively numbered, issue of the journal Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms. The content of the Proceedings will consist of selected contributions following the reports delivered to the conference.

The format, letter-type and layout will be the same as for the regular issues of the Journal. There will be
no page charges, however, with strict length limitation, i.e. for the **regular paper to be within** 4 NIMB ready-printed pages, while for the **invited one to be within** 6 NIMB ready-printed pages. A manuscript should represent original work not previously published and not being considered for publication elsewhere.

The Publisher requests the submission of the electronic version of the manuscripts. On-line manuscripts' submission via Elsevier's Editorial System (EES) at [http://ees.elsevier.com/nimb](http://ees.elsevier.com/nimb) will be required starting from **November 1, 2016**. The submission deadline of the first version of manuscript is **December 1, 2016**. All papers should be submitted before this date and the option to submit online via the submission system (EES) will be closed after that date. The authors are requested to select the correct article type when they submit their articles in EES. If the authors select the wrong article type their paper may end up publishing in a regular issue and not the special issue. When submitting the papers, the authors must select “**SI: NIMB_Channeling 2016**” as the article type.

For further information, please, do not hesitate to contact the Organizing committee via e-mail: channeling2016@lists.lnf.infn.it

**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/channeling2016/registration.php](http://www.lnf.infn.it/conference/channeling2016/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>
<thead>
<tr>
<th></th>
<th>Early registration /before July 16, 2016/</th>
<th>Late registration /after July 15, 2016/</th>
<th>On-site registration /September 25-30, 2016/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular</td>
<td>400 €</td>
<td>500 €</td>
<td>600 €</td>
</tr>
<tr>
<td>Student</td>
<td>200 €</td>
<td>300 €</td>
<td>400 €</td>
</tr>
<tr>
<td>Accompanying</td>
<td>100 €</td>
<td>100 €</td>
<td>100 €</td>
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</tbody>
</table>

includes the attendance of all conference sessions, technical and social, the publishing of the books of both abstracts and proceedings, etc. The advanced online payment at earlier registration allows the participants to have a reduced registration fee (please, note that the reduction depends on the period of payment and is split in two steps); this payment should be done via bank transfer addressed to the bank account specified on the registration page.

Simultaneously, a pdf copy of the bank transfer (with a note “**Channeling 2016**” fee - Last Name/Name) should be sent to the Organizing Committee via e-mail channeling2016@lists.lnf.infn.it.

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**” and submitting a “**Grant Application Form**” (available online and presented at the end of the announcement).
Participants should arrange their own accommodation contacting the hotels directly quoting "Channeling 2016". All necessary information on the booking procedure is online published; please, follow the link for details: [http://www.lnf.infn.it/conference/channeling2016/accommodation.php](http://www.lnf.infn.it/conference/channeling2016/accommodation.php), and if necessary do not hesitate to contact the conference secretaries.

**Important dates**

- Abstract submission: by June 30, 2016
- Abstract acceptance: by July 5, 2016
- Hotel reservation: by July 31, 2016 (participants are requested to secure a room as soon as possible)
- Registration: early by July 15, 2016, late since July 16 by September 25-30, 2016
- Application for Student/Young Scientist's support: by May 31, 2016
- Manuscript submission: to be ready for submission by November 1, 2016

*Participants are invited to check periodically the update of the conference deadlines visiting the official web site.*

**How to get to the conference**

Channeling 2016 will take place in Sirmione and Desenzano, two close each other small towns on the southern shore of Lake Garda in the north of Italy. There are known as Sirmione del Garda and Desenzano del Garda to describe their location on the lake. The towns are in the region of Lombardia and make a convenient base for travellers using public transport, as they are on Italy's rail network. They are also close to (and in the province of) the larger town of Brescia. The most convenient airport for the area is the airport of Verona.

The meeting venue, the Hotel Acquaviva is placed in Desenzano (Viale Francesco Agello, 84, 25010 Desenzano del Garda -Brescia). The conference hall, where all week working sessions will be held, is placed at the hotel.

The conference will start with the Channeling Primer session and followed at the end of the session by welcome mixer on Sunday afternoon September 25 at the congress-hall PALACREBERG SIRMIONE (Piazzale Europe, 5, 25019 Sirmione del Garda - Brescia).

**BY CAR**

If you are driving, you can reach Desenzano from the autostrada which connects Milan with Venice. Motorway A4 Milano-Venezia: Exit of Sirmione - Follow the directions to the Historical centre - [www.autostrade.it](http://www.autostrade.it)

**BY TRAIN**

Rail services crossing northern Italy stop in Desenzano, heading from Venice across to Turin. Venice is a two-hour journey away, but note that there are several different categories of train on the route, with different ticket prices. One of the rare regional trains will cost half as much as an intercity service. Desenzano's little railway station is uphill from the centre of town. It's an easy ten-minute walk downhill, but more tiring on the way up if you're pulling suitcases. The lazy option is to take the local bus service. There are three routes, numbered 1, 2 and 3. Tickets can be purchased on board for €1 per journey.
To reach the heart of town, just leave the railway station, cross the road and head downhill, continuing straight on. Station of Peschiera or Desenzano: Bus for Sirmione - [www.trenitalia.com](http://www.trenitalia.com)

**BY PUBLIC BUS**

There are also bus services to surrounding towns and further afield. A bus to Verona stops opposite the railway station, and there are also various excursions to Venice and other destinations - pick up some details at the tourist information office.

From Verona APT: [www.apt.vr.it](http://www.apt.vr.it)

From Brescia SAIA: [www.saiatrasporti.it](http://www.saiatrasporti.it)

From Mantova APAM: [www.apam.it](http://www.apam.it)

**BY LAKE**

Sirmione ferry dock with access to Piazza Carducci. [Navigarda](http://www.navigarda.it) ferries.

**BY PLANE**

The nearest airports to Desenzano are Brescia Airport (Ryanair fly there) and Verona. From either airport you can get a bus into the centre of town - Brescia or Verona - and from there you can travel by bus or train to Desenzano.

Brescia: Gabriele D'Annunzio Airport at 37 Km. - [www.aeroportobrescia.it](http://www.aeroportobrescia.it)

Verona: Valerio Catullo Airport at 34 Km. - [www.aeroportoverona.it](http://www.aeroportoverona.it)

Bergamo: Orio al Serio Airport at 90 Km. - [www.orioaeroporto.it](http://www.orioaeroporto.it)

Milano: Linate Airport at 131 Km and Malpensa Airport at 176 Km. - [www.sea-aeroportimilano.it](http://www.sea-aeroportimilano.it)

Venezia: Marco Polo Airport at 159 Km. - [www.veniceairport.it](http://www.veniceairport.it)

**Weather**

Temperatures in Lake Garda, northern Italy, remain warm in September without the intense heat of the summer months, making it a very pleasant time to visit. The average temperature this month is a warm 20°C (68°F) with average highs of 25°C (77°F) and a 47% chance of a sunny day, so there is still plenty of opportunities for sunbathing and outdoor activities like sailing and windsurfing on the lake or hiking in the beautiful surrounding countryside.

Despite the warm temperatures, however, this is also the wettest month at the lake with a 28% chance of rain and an average rainfall of 86 mm over 9 days. There is also a 4% chance of a cloudy day, so it’s important to keep an eye on the local forecast to avoid getting caught in a shower.

As autumn approaches the temperature around the lake tends to drop so the beginning of the month is likely to see the warmest temperatures with average highs of 23°C (73°F) which by the end of the month have fallen to an average of 18°C (64°F). Temperatures at night or when the sun isn’t shining this month can get a little chilly with an average low of 15°C (59°F) so make sure to pack accordingly. Also bear in mind that the days begin to shorten at this time of year with an average of 9 hours sunshine compared to 11 in August.

Although there may sometimes be a slight autumnal feel to the weather this month, the wind remains calm with only a 2% chance of experiencing a windy day making it a great season for sightseeing around some of the Roman ruins or touring some of the many vineyards in the area. The temperature around the lake is fairly consistent this month and remains similar to the rest of the region including the beautiful neighbouring city of Verona.
Instructions to Authors of Abstracts for Oral or Poster Contributions:

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

Author\textsuperscript{a}, Author\textsuperscript{b}: Times New Roman 12, centered
\textsuperscript{a} Institute: Times New Roman 10, centered
\textsuperscript{b} Institute: Times New Roman 10, centered

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.
# GRANT APPLICATION FORM
/to be submitted by May 31, 2016/

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<thead>
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<th>Name:</th>
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<td>Institute/University address &amp; Position of the applicant</td>
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<tr>
<td>Title of the contribution to Channeling 2016</td>
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<tr>
<td>Financial support by home institution/other organization for the participation in Channeling 2016</td>
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Date: 

Signature:

Please send a copy of the completed Grant application form together with a recommendation letter of your supervisor or of some prominent scientist of your Institute/University before May 31, 2016 to the Channeling 2016 secretariat via e-mail: channeling2016@lists.infn.it.