

Channeling 2018: *Advance Program*

Sunday, 23 September

10:00-12:00 - **Registration at the Hotel Continental Ischia**

"CHANNELING PRIMER"

The Parrocchia di Santa Maria delle Grazie in S. Pietro Ischia

14:00 - **S. Dabagov, A. Spallone, C. Cigliano, D. Giulietti**

- Opening
- Greetings by the Comune di Ischia
- Greetings by the chairs of the mini-workshop Channeling in PPLA-2018
- Greetings by the Istituto Professionale Alberghiero Ischia

14:30 - **A. Ulianova & A. Coppa & Ch. Di Leva & A. Mazzella**, Geology Activities and Radon in Ischia Island

14:45 - **A. Polosa**, Alternative Methods for Light Dark Matter Detection (*Invited*)

15:15 - **S. Fomin**, Soliton-like Regime of Neutron Transport in a Multiplying Medium. Physical Ground of Traveling Wave Reactor (*Invited*)

15:45 - **A. Marcelli**, From Galileo to Abbe: the Contribution of Lenses to the Foundation of Modern Sciences. What is the Role of Lens in the Coming Quantum Era? (*Invited*)

16:15 - **G. Mazzitelli**, Science Communication: a New Frontier of Researcher's Job (*Invited*)

16:45 - **W. Dunn**, The International Radiation Physics Society

18:00-19:30 - **Welcome at the Castello Aragonese**

Monday, 24 September - Hotel Continental Ischia

S1: Channeling & Radiations in Crystals

Session 1.1 **Chair: S. Dabagov**

- 9:00-9:30 **N. Shul'ga**
Advances in Coherent Radiation and Channeling. An Analogue of the Ramsauer-Townsend Effect for Relativistic Positrons at Scattering in Ultrathin Crystals (*Invited*)
- 9:30-9:45 **H. Backe**
Analysis of Channeling Experiments in Diamond and Silicon Single Crystals with the Aid of the Fokker-Planck Equation
- 9:45-10:00 **A. Sytov**
CRYSTALRAD Simulation Code for Modeling of Coherent Effects of Radiation in Crystals
- 10:00-10:15 **S. Trofymenko**
X-ray Emission by a High-Energy "Half-Bare" Electron in Ultra-Thin Crystals
- 10:15-10:30 **T. Tukhfatullin**
Orbital Angular Momentum of Channeling Radiation from Relativistic Electrons in Thin Crystals
- 10:30-10:45 **B. Paroli**
Measurement of Phase and Topological Properties of OAM Channeling Radiation through Asymmetric Lateral Coherence
- 10:45-11:00 **A. Mazzolari**
Beam Steering and Radiation in Ultrashort Silicon and Germanium Bent Crystals at the MAInzer Mikrotron

Coffee break (20 min)

S1: Channeling & Radiations in Crystals

Session 1.2 **Chair: A. Marcelli**

- 11:20-11:50 **N. Neri**
Electromagnetic Dipole Moments of Charged Baryons with Bent Crystals at the LHC (*Invited*)
- 11:50-12:05 **V. Baryshevsky**
Electromagnetic Dipole Moment and Time Reversal Invariance Violating Interactions for High Energy Baryons in Bent and Straight Crystals at LHC

- 12:05-12:20 **R. Rossi**
Dechanneling Population at Extreme Crystal Bending with 6.5 TeV Proton Beam
- 12:20-12:35 **S. Abdrashitov**
Total Yield and Spectra of Positrons Produced by Coherent Bremsstrahlung from $10 \div 70$ MeV Electrons
- 12:35-12:50 **R. Chehab**
The Hybrid Positron Source Using Channeling: a Promising Device for Future Colliders
- 12:50-13:05 **A. Shchagin**
Comparison of Parametric X-ray Radiation and Diffracted Transition Radiation

Lunch break (1 h 25 min)

S2: Channeling & Radiations in Various Fields

Session 2.1 Chair: V. Guidi

- 14:30-15:00 **X. Artru**
Quantum Versus Classical Approach of Dechanneling and Other Incoherent Processes at High Energy in Aligned Crystals. On the Validity of the Baier-Katkov Formula (*Invited*)
- 15:00-15:15 **E. Bulyak**
Statistics of the Radiating Relativistic Electrons
- 15:15-15:30 **A. Konkov**
Physical Interpretation and Asymptotic Analysis of Particle's Energy Losses on the Polarization Radiation Process
- 15:30-15:45 **A. Feshchenko**
Coherent Radiation from Modulated Electron Beams in a Compton Laser
- 15:45-16:00 **G. Naumenko**
Coherent Unipolar Cherenkov and Diffraction Radiation Generated by Relativistic Electrons
- 16:00-16:15 **L. Gevorgyan**
Partially Coherent Short-Wave Radiation of an Electron Bunch with Natural Asymmetric Distribution
- 16:15-16:30 **A. Kubankin**
Parametric X-ray Radiation from Powders

Coffee break (20 min)

S2: Channeling & Radiations in Various Fields

Session 2.2 **Chair: G. Mazzitelli**

- 16:50-17:20 **R. Pompili**
Guiding of Charged Particle Beams in Curved Capillary-Discharge Waveguides (*Invited*)
- 17:20-17:35 **A. Kotanjyan**
Generation of Surface Polaritons in Dielectric Cylindrical Waveguides
- 17:35-17:50 **D. Sergeeva**
Local Field Effect in Smith-Purcell Radiation from Dotted Grating
- 17:50-18:05 **H. Gevorgyan**
The Influence of Medium Polarization Inhomogeneity on the Channeling Radiation from a Positron Bunch
- 18:05-18:20 **A. Gogolev**
Influence of Technical and Material Uncertainties on Optimized Parameters in X-ray Differential Phase Contrast Imaging System Based on Talbot Effect
- 18:20-18:35 **M. Shevelev**
X-ray Hybrid Radiation
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PS: Poster Session

Session PS1 **Chair: D. Hampai**

- PS1-01 V. Epp, J.G. Janz , M.A. Zotova - Angular Momentum of Radiation at Axial Channeling
- PS1-02 D.R. Badreeva, N.P. Kalashnikov, A.S. Olchak - The Electrons Capture into the Axial Channeling State as the Radiative Recombination Effect
- PS1-03 A.V. Leukovich, V.V. Haurylavets, L. Bandiera, A.I. Sytov, V.V. Tikhomirov, A.S. Lobko, V.A. Mechinsky - GEANT4 Simulation of Electromagnetic Shower Development in Oriented Crystals
- PS1-04 K. Fedorov, P. Karataev, T. Pacey, Y. Saveliev, A. Potylitsyn, K. Lekomtsev - Longitudinal Beam Profile Diagnostics Using Coherent Cherenkov Diffraction Radiation at CLARA Facility
- PS1-05 V.M.Bystritsky, G.N.Dudkin, Yu.L.Pivovarov, T.A.Tukhfatullin, S.I.Kuznetsov, M. Filipowicz - Influence of Channeling Effect on Enhancement Factor for Reaction $D(3\text{He},p)4\text{He}$ in Astrophysical Energy Region 16÷34 keV in ZrD Target
- PS1-06 N. Shul'ga, V. Truten' - On Fast Charged Particles Scattering in a Thin Crystal Undulator
- PS1-07 A.A. Savchenko, S.B. Dabagov, A.A. Tishchenko, G. Venanzoni, M.N. Strikhanov - GEANT4 Simulation of Energy Deposition in Lead Fluoride Calorimeter for g-2 Experiment

- PS1-08 N.F. Shul'ga, V.D. Koriukina - Processes of Coherent and Incoherent Scattering of Charged High-Energy Particles in Ultra Thin Targets
- PS1-09 Yu.P. Kunashenko - Coherent Bremsstrahlung from Axially Channeled Electrons
- PS1-10 O.V. Bogdanov, P.O. Kazinski - Generation of Twisted Photons by Bent Crystals
- PS1-11 X.T. Li, Yu.P. Kunashenko - Spin Rotation of Planar Channeled Muons and Anti-Muons in Bent Crystal
- PS1-12 S.G. Stuchebrov, Yu.M. Cherepennikov, A.A. Krasnykh, I.A. Miloichikova, M.V. Shevelova - Experimental and Theoretical Investigations of Generation and Transmission Mechanisms of Cherenkov Radiation in an Optical Fiber
- PS1-13 K.B. Korotchenko, X.T. Li, S.B. Dabagov - Large-Angle Channeling Radiation by Relativistic Muons
- PS1-14 K.B. Korotchenko, Yu.L. Eikhorn, S.B. Dabagov - Ultraviolet Channeling Radiation from Protons Accelerated by Medical Accelerators
- PS1-15 O.V. Bogadanov, Yu. L. Pivovarov, T. A. Tukhfatullin - The Polarization Characteristics of Radiation from Electrons Channeled in a Half-Wave Crystal
- PS1-16 N.V. Maksyuta, V.I. Vysotskii, S.V. Efimenko, E.V. Martysh, S.B. Dabagov - Investigation of the Wake Potentials in the Orientational Motion of Charged Particles in Ionic Crystals
- PS1-17 V.G. Baryshevsky, A.A. Gurinovich - Photonic Crystal-Based Compact High-Power Vacuum Electronic Devices
- PS1-18 K.L. Gevorgyan - Channeling Radiation from Positron Bunch in Nanotubes with Polarization Inhomogeneity
- PS1-19 K.B. Korotchenko, Yu. Kunashenko - Channeling Radiation of Twisted Phonons from Axially Channeled Polarized Electrons
- PS1-20 E. Mazur - Above-Barrier Band Structure Leads to the Hard Photon Emission Spectrum of the Fast Oriented Particle
- PS1-21 M.V. Maksyuta, V.I. Vysotskii, S.V. Efimenko, Yu.A. Slinchenko - Peculiarities of Channeling and Generated Radiation of Relativistic Electrons in the Charged Axes of Lithium Hydride Crystals
- PS1-22 N.V. Maksyuta, V.I. Vysotskià, S.V. Efimenko, V.I. Grygoruk, Yu.A. Slinchenko, S.B. Dabagov - On Restructuring the Radiation Spectrum for Three-Frequency Parametric Interaction at Planar Electron Channeling in the Crystals with a Zinc Blende Structure
- PS1-23 H. Gevorgyan, L. Gevorgian - Tunable Optical Radiation Formed in Crystalline Undulator
- PS1-24 H. Gevorgyan, L. Gevorgian - Coherent Radiation Characteristics of Modulated Positron Bunch, Formed in Crystalline Undulator

- PS1-25 B. Azadegan, S.B. Dabagov - Enhancement of Neutrons Yield in dd Reactions within a TiD₂ Crystalline under Irradiation by a Deuterium Ion Beam
- PS1-26 E. Bulyak, N. Shul'ga - On Coherency of Gamma Photons
- PS1-27 A.A. Tishchenko, A.A. Savchenko, M.N. Strikhanov - Backward X-ray TR from a Multilayered Structure
- PS1-28 T.Yu. Alekhina, A.V. Tyukhtin - Radiation of a Bunch in a Waveguide with a Semi-bounded Anisotropic Dielectric
- PS1-29 S.N. Galyamin, V.V. Vorobev, A.V. Tyukhtin, A. Benediktovitch, S. Chuchurka - Radiation from a Dielectrically Loaded Waveguide with Open End
- PS1-30 S.N. Galyamin, A.V. Tyukhtin, V.V. Vorobev - Charged Particle Bunch Radiation in Cherenkov Concentrator

Tuesday, 25 September - Hotel Continental Ischia

S2: Channeling & Radiations in Various Fields

Session 2.3 **Chair: G. Cavoto**

- 9:00-9:30 **S. Maksimenko**
Surface Plasmon Slowing Down and Cherenkov-Type THz Emission in Graphene Based Structure (*Invited*)
- 9:30-9:45 **S. Uglov**
Observation of the X-ray Cherenkov Effect Near 100 eV Photons Energy
- 9:45-10:00 **A. Tyukhtin**
Charge Radiation in the Presence of Conical and Prismatic Dielectric Objects: Far-Field Area
- 10:00-10:15 **S. Galyamin**
Radiation of a Charge Moving in a Wire Structure
- 10:15-10:30 **A. Saharian**
On Amplification of Radiation from a Charged Particle Circulating around a Cylinder
- 10:30-10:45 **V. Syshchenko**
Radiation on Conducting Sphere and Hemispherical Bulge in Conducting Plane: Further Development
- 10:45-11:00 **A. Mkrtchyan**
Features of Radiation Generated by Bunches of Charged Particles Passing Through the Centre of a Ball

Coffee break (20 min)

S4: Charged Beams Shaping & Diagnostics

Session 4.1 **Chair: A. Potylitsyn**

- 11:20-11:50 **P. Karataev**
Optical Cherenkov Diffraction Radiation as a Tool for Non-invasive Charged Particle Beam Diagnostics (*Invited*)
- 11:50-12:05 **G. Kube**
A Simple Model to Describe Smoke Ring Shaped Beam Profile Measurements with Scintillating Screens at the European XFEL
- 12:05-12:20 **A. Tishchenko**
Diffraction Radiation for 2D Transverse Beam Size Diagnostics

- 12:20-12:35 **I. Vnukov**
Measurement of Electron Beam Transverse Sizes by Angular Distribution of Their Emission in a Thin Crystal
- 12:35-12:50 **A. Rusetskii**
Orientation Effect in the Neutron Yield in Deuterated Pd Target Bombarded by Deuterium Ion Beam
- 12:50-13:05 **V. Maisheev**
Crystal Optical Solution for Generation of High Energy Neutrino Beams

Lunch break (1 h 25 min)

S1: *Channeling & Radiations in Crystals*
Session 1.3 Chair: H. Backe

- 14:30-15:00 **U. Wienands**
Past and Future Channeling Experiments in the US (*Invited*)
- 15:00-15:15 **V. Tikhomirov**
Quantum Features of Relativistic Particle Scattering and Radiation in Crystals
- 15:15-15:30 **S. Shul'ga**
Periodical Dependence of Radiation Intensity on Crystal Thickness and Incidence Angle at Motion of Fast Charged Particles in the Planar Field of a Thin Crystal
- 15:30-15:45 **N. Kalashnikov**
The Thin Structure of the Transversal Energy Spectrum of Electrons at Axial Channeling due to the Spin-Orbit Interaction
- 15:45-16:00 **W. Wagner**
Non-Dipolarity of Axial Channeling Radiation at GeV Beam Energies
- 16:00-16:15 **N. Bondarenco**
Volume Reflection Dependence on the Interplanar Potential
- 16:15-16:30 **A. Kyryllin**
Deflection of High-Energy Negatively Charged Particles by Means of a Bent Crystal

Coffee break (20 min)

S5: Novel Sources: FEL/Laser/Plasma Channels
Session 5.1 Chair: L. Serafini

- 16:50-17:20 **G. Dattoli**
Free Electron Laser and CARM Devices: A Unified Point of View (*Invited*)
- 17:20-17:35 **P. Kazinski**
Radiation of Twisted Photons in Periodical Structures in the Classical Regime
- 17:35-17:50 **D. Wang**
Dual Color X-Rays Production from Thomson or Compton Sources at THU
- 17:50-18:05 **Y. Zhao**
Compton Scattering in Delayed Counter-Propagating Laser Beams Irradiating Solid Target
- 18:05-18:20 **A. Lobko**
Timing Resolution in Aligned PWO Crystal Scintillators
- 18:20-18:35 **Y. Li**
Towards Positron Acceleration and High Quality Preservation in Nonlinear Wakefields in Hollow Plasma

PS: Poster Session

Session PS2 Chair: S. Galyamin

- PS2-01 L.Sh. Grigoryan, H.F. Khachatryan, A.V. Sargsyan, M.L. Grigoryan - Features of Scattering of a Plane Electromagnetic Wave on a Conductive Ball
- PS2-02 A. Potylitsyn, G. Naumenko, M. Shevelev, D. Shkitov, A. Aryshev, N. Terunuma, J. Urakawa - Polarization Characteristics of the Grating Diffraction Radiation
- PS2-03 A.V. Tyukhtin, E.S. Simakov - Surface Radiation from Charge Moving along Corrugated Metal Structure with Small Period
- PS2-04 A.Potylitsyn, S. Gogolev - Azimuthal Asymmetry of Coherent Cherenkov Radiation From a Tilted Bunch
- PS2-05 S.V. Anishchenko, V.G. Baryshevsky, A.A. Gurinovich - Electrostatic Cumulation of High-Current Electron Beams for Terahertz Sources
- PS2-06 V.I. Vysotskii, M.V. Vysotskyy, N.V. Maksyuta, S.B. Dabagov - Induced-Dispersive Channeling of Neutral Atoms and Molecules in Zeolite Channels, Natural Asbestos Fibers and Structured Cylindrical Superlattices
- PS2-07 A.S. Konkov, V.V. Bleko, V.V. Bleko - Reaction Forces of Polarization Radiation
- PS2-08 M.M. Rychkov, V.V. Kaplin, V.A. Smolyanskiy, I.K. Vas'kovskiy - New Linear Microfocus Bremsstrahlung Source Based on Compact Betatron With Light and Heavy Narrow Targets Inside

- PS2-09 O.V. Bogdanov, N. Kuzminchuk-Feuerstein, E.I. Rozhkova, Yu.L. Pivovarov - Cherenkov Radiation from Relativistic Heavy Ions in Liquid Radiator
- PS2-10 S.G. Stuchebrov, Yu.M. Cherepennikov, A.A. Krasnykh, I.A. Miloichikova - Measurement of Gamma Radiation Beam Profile in the Cross Section by Analyzing of Cherenkov Radiation Generated in the Fiber during Multi-Angle Scanning
- PS2-11 A.R. Mkrtchyan, A. Mkrtchyan, and V. Kocharyan - The Transparency Effect in Two Wall Acoustic Tubes at the Presence of Standing and Running Acoustic Fields Exited There
- PS2-12 V.Kh. Kotanjyan, A.A. Saharian, A.S. Kotanjyan - Synchrotron Radiation in a Homogeneous Medium for a Rotating Observer
- PS2-13 E. Frolov, A. Dik, S. Dabagov - Particles Deflection, Focusing and Collimation in Optical Lattices
- PS2-14 V. Joshi, S. Ghosh - Multi-Particle Time-Domain Analysis of Coherent Synchrotron Radiation
- PS2-15 L. Torrissi, M. Cutroneo, A. Torrissi, L. Silipigni, M. Rosinski, J. Badziak, J. Wolowski, A. Zaraś-Szydłowska, P. Parys - Plasma Electron Density Control in TNSA Regime Using fs Laser
- PS2-16 M. Cutroneo, L. Torrissi, J. Badziak, M. Rosinski, A. Mackova, P. Malinsky, A. Torrissi, Z. Sofer, R. Böttger - Hybrid Graphene Based Material Promising Target in Laser Matter Interaction
- PS2-17 M. Galletti, H. Pires, P. Oliveira, G. Figueira, M. Galimberti - Ultrashort Optical Parametric Amplifier and Oscillator up to the Near-Infrared
- PS2-18 L. Torrissi, G. Costa - Compact Thomson Parabola Spectrometer for Fast Diagnostics of Different Intensity Laser-Generated Plasmas
- PS2-19 G. De Matteis, D. Delle Side, L. Martina, V. Turco - Light Guiding By Defects Into Frustrated Cholesteric Liquid Crystals
- PS2-20 V. Nassisi, D. Delle Side, L. Velardi, L. Torrissi, R. De Angelis, P. Andreoli, M. Cipriani, F. Consoli, G. Cristofari, G. Di Giorgio, D. Giuliatti, A.P. Caricato, D. Giove, A. Fazzi - New Targets for Laser Proton Production
- PS2-21 V. Trunova, A. Legkodymov, A. Fedotov, E. Levichev, O. Stepanova - Development of XRFA-SR Method with the Hard X-Ray (65 keV) Range for Paleoclimate Reconstruction (Selena River of Lake Baikal Region) at the Storage Ring VEPP-4M
- PS2-22 Yu.M. Cherepennikov, D. Hampai, C. Azzutti, A.A. Krasnykh, I.A. Miloichikova, S.G. Stuchebrov, A.V. Batranin, S.B. Dabagov - Polycapillary-Based X-Ray Tomography of Complex Samples with Porous Matrix
- PS2-23 N.V. Maksyuta, V.I. Vysotskii, S.V. Efimenko, D.N. Maksyuta, V.S. Malyshevsky, E.V. Dergacheva, A.S. Sabirov - Investigation of the Iridescence Scattering of Hydrogen Atoms in Non-Chiral Carbon Nanotubes

- PS2-24 A. Gogolev, V. Kiziridi, R. Rezaev, A. Vukolov - X-ray Sampling Calorimeter for Bunch Length Measurement
- PS2-25 V.V. Fedorov, V.V. Voronin, S.Yu. Semenikhin, Ya.A. Berdnikov - Neutron Spin Rotation at Laue Diffraction in a Deformed Transparent Crystal with no Center of Symmetry
//**cancelled**//
- PS2-26 A. R. Mkrtchyan, V. V. Parazian, A. A. Saharian - Transition Radiation on Surface Waves
- PS2-27 A. Baryshnikov, S. Dabagov - Capillary Optics. Modeling of Numerous Transformations of X-rays
- PS2-28 V. Sugár, Sz. Török, P. Zagyvai, G. Náfrádi, G. Aprigliano - Experimental Cave Design for Neutron Diffraction at a High Brilliance Source
- PS2-29 S.G. Stuchebrov, Yu.M. Cherepennikov, A.A. Krasnykh, I.A. Miloichikova - Peculiarities of Electron Beam Propagation through Polymer Samples Manufactured by Layer-by-Layer Fusing Method with Different Printing Parameters
- PS2-30 Yu.M. Cherepennikov, I.A. Miloichikova, A.A. Krasnykh, S.G. Stuchebrov - Comparison of Electron Beam Attenuation in Samples of ABS and HIPS Plastics by Fused Deposition Modeling

Wednesday,
26 September - *Hotel Continental Ischia*

W1 mini-workshop: *Channeling in Plasma Physics by Laser and Applications*
Session W1.1 Chair: L. Torrisi

- 9:00-9:30 **L. Roso**
Challenges of High Repetition PetaWatt Lasers (*Invited*)
- 9:30-10:00 **M. Galimberti**
New Ultrashort OPCPA PetaWatt Class Beamline for Vulcan Laser Facility (*Invited*)
- 10:00-10:30 **M. Cipriani**
High Power Laser Irradiation of Low-Z Porous Media: Numerical Simulations and Experiments (*Invited*)
- 10:30-10:45 **A. Torrisi**
Monitoring of the Plasma Generated by a Gas-Puff Target Source Dedicated for SXR/EUV Microscopy
- 10:45-11:00 **V. Nassisi**
KrF Laser Irradiation of Highly Efficient Photocathodes Based on NanoDiamond Layers

Coffee break (20 min)

W1 mini-workshop: *Channeling in Plasma Physics by Laser and Applications*
Session W1.2 Chair: D. Giulietti

- 11:20-11:50 **A. Fazzi**
Advanced Instrumentation for Laser-Driven Acceleration Experiments (*Invited*)
- 11:50-12:05 **A. Marcu**
Laser Impulse Transfer and Real-Time Target (Re-) Alignment Systems
- 12:05-12:20 **A. Curcio**
Fusion Reactions in Solid and Plasma Targets
- 12:20-12:35 **T. Alekhina**
Cherenkov-Transition Radiation in a Waveguide with a Semibounded Strongly Magnetized Plasma
- 12:35-12:50 **V. Vysotsky**
Investigation of Stimulated Action of Distant Undamped (Self-Channeled) Temperature Waves on Nuclear Fusion in Remote Targets
- 12:50-13:05 **A. Dik**
On a Zone Structure for Channeled Particles in Optical Lattices

Sightseeing Tour

Thursday, 27 September - Hotel Continental Ischia

S4: Charged Beams Shaping & Diagnostics

Session 4.2 **Chair: L. Bandiera**

- 9:00-9:30 **G. Cavoto**
The CRYSBEAM Project (*Invited*)
- 9:30-9:45 **F. Galluccio**
Crystal-Assisted Beam Manipulation at CERN SPS
- 9:45-10:00 **A. Savchenko**
Future Transition Radiation Detectors: Theory and Experiment
- 10:00-10:15 **E. Bagli**
High-Energy e^-/e^+ Spectrometer via Coherent Interaction in a Bent Crystal
- 10:15-10:30 **M. Romagnoni**
Bent Crystals for Large Angle Deflection of TeV Particle Beams
- 10:30-10:45 **M. Garattini**
New Experimental Method to Measure Inelastic Nuclear Interactions of High Energy Positive Charged Particles with Bent Crystals
- 10:45-11:00 **E. Tsyganov**
Crystal Based Fusion Processes

Coffee break (20 min)

S3: X-Rays/Neutrons/Atoms Channeling

Session 3.1 **Chair: L. Allocca**

- 11:20-11:50 **D. Hampai**
Channeling X-Rays: Applied Polycapillary Optics (*Invited*)
- 11:50-12:05 **J. Fernandez**
Understanding the X-ray Emission Spectrum after Excitation with a Source of X-rays: from Theory to Experiment
- 12:05-12:20 **Y. Hayakawa**
Performance of K-edge Subtraction Tomography as Application of the X-ray Source Based on Parametric X-ray Radiation
- 12:20-12:35 **L. Marchitto**
X-ray Tomography and 3D CFD Simulation of Fuel Mass Distribution in a GDI Spray

12:35-12:50 **A. Scordo**
Characterization of a High Resolution Von Hamos Spectrometer with HAPG Crystals for Extended Sources; a New Opportunity for High Precision Nuclear Physics Measurements

12:50-13:05 **M. Mazuritsky**
Interaction of Channeling X rays, Coherent Excitation of Fluorescence and Interference Phenomena of Transmitted Radiation at the Exit of Microchannel Plates

Lunch break (1 h 25 min)

S4: Charged Beams Shaping & Diagnostics
Session 4.3 Chair: W. Wagner

14:30-15:00 **L. Bandiera**
Strong Reduction of the Effective Radiation Length in an Axially Oriented Scintillator Crystal (*Invited*)

15:00-15:15 **G. Germogli**
Crystalline Target for Radioisotope Production via Anti-Channeling

15:15-15:30 **R. Nazhmudinov**
Evolution of the Landau Spectral Peak Produced by 50 GeV Protons and 7 GeV Electrons in Si Detector at Rotation of the Detector

15:30-15:45 **M. Antonelli**
Low EMittance Muon Accelerator

15:45-16:00 **A. Fomin**
Measuring the Magnetic Dipole Moments of Short Living Particles Using Bent Crystals

16:00-16:15 **V. Vysotsky**
Formation and Application of Coherent Correlated States of Charged Particles at Action of Weak Electromagnetic Field and During Orientation Motion of Particles in Periodic Structures

16:15-16:30 **S. Bartolucci**
Correlated States and Nuclear Reactions: an Experimental Test with Low Energy Beams

Coffee break (20 min)

S5: Novel Sources: FEL/Laser/Plasma Channels
Session 5.2 Chair: A. Ghigo

- 16:50-17:20 **M. Ferrario**
Advanced Accelerator Developments at EuPRAXIA@SPARC_LAB (*Invited*)
- 17:20-17:35 **O. Ivashchuk**
Conception of Piezoelectric Accelerator
- 17:35-17:50 **F. Bisesto**
Time-Resolved Measurements of Fast Electrons and Protons Emitted in Ultra-Intense Laser-Solid Matter Interactions at SPARC_LAB
- 17:50-18:05 **A. Shchagin**
Pyroelectric Undulator
- 18:05-18:20 **H. Zhang**
Experiments on Polarization Control of Thomson Scattering X/ γ -ray Source
- 18:20-18:35 **R. Camattari**
Silicon Undulator Prototype: Manufacturing and X-ray Characterization

PS: Poster Session

Session PS3 Chair: L. Marchitto

- PS3-01 S.M. Polozov, A.I. Pronikov - Influence of the Frequency Detuning to Electrodynamics Parameters of an Electron Linac
- PS3-02 A. Babaev, S. Dabagov - Simulations of Beam Channeling in a Spherically Bent Crystal
- PS3-03 A.G. Afonin, V. Barnov, G.I. Britvich, Yu.A. Chesnokov, P.N. Chirkov, A.A. Durum, M.Yu. Kostin, I.S. Lobanov, V.A. Maishev, I.V. Poluektov, S.F. Reshetnikov, Yu.E. Sandomirskiy, D.A. Savin, A.A. Yanovich - A Study on Implementation of Multistribe Crystals to Protect the Septum-Magnets and to Generate the Gamma Radiation on the U-70 Accelerator
- PS3-04 E. Bagli, D. De Salvador, A. Carnera, G. Guidi, L. Bacci, L. Bandiera, R. Camattari, G. Germogli, A. Mazzolari, F. Sgarbossa, A. Sytov - Enhancement of the Inelastic Nuclear Interaction Rate in Crystals via Anti-Channeling
- PS3-05 V. Fedorov - Studying the Neutron Properties in Perfect Crystal Optics // **cancelled** //
- PS3-06 V. Mascagna, E. Bagli, G. Ballerini, L. Bandiera, A. Berra, C. Brizzolari, D. De Salvador, V. Guidi, A. Mazzolari, M. D. Moulson, M. Prest, M. Romagnoni, M. Soldani, A. Sytov, E. Vallazza - Advanced Experimental Setups for Investigation of Coherent Interactions of High-Energy Particle Beams with Crystals
- PS3-07 V.I. Vysotskii, M.V. Vysotskiyy - The Features of Propagation and the Remote Collapse of the Correlated Wave Packet

- PS3-08 O. Ivashchuk, I. Kishin, A. Kubankin, A. Oleinik, A. Shchagin, V.I. Alekseev, A.N. Eliseyev - Pyroelectric Deflector of 7 MeV Electron Beam
- PS3-09 Y. Takabayashi, Yu. L. Pivovarov, T. A. Tukhfatullin - Simulation of High-Energy Particles Channeling Using Mathematica©
- PS3-10 V. Vysotskii, M. Vysotskyy - The Mechanism of Effective Nuclear Reactions under the Action of Optimal Pulsed Magnetic Fields in Natural Lightning and Discharge Channels
- PS3-11 R. Rossi, L.S. Esposito, F. Galluccio, S. Montesano, W. Scandale - Crystal Collimation Layout Studies with Lead Ion Beams in SPS // **cancelled** //
- PS3-12 K.A. Vokhmyanina, V.S. Sotnikova, A.A. Kaplii, R.M. Nazhmudinov, I.S. Nikulin, M.V. Mishunin, A.V. Sotnikov, P.N. Zhukova - Passage of 10 keV Electrons through Ceramic Macrochannels
- PS3-13 S.V. Trofymenko, R.M. Nazhmudinov, A.S. Kubankin, A.V. Shchagin, O.O. Ivashchuk - Charged Particles Production by High-Energy Electron Beam in a Tungsten Target
- PS3-14 H. Geissel, N. Kuzminchuk-Feuerstein, C. Scheidenberger, O. V. Bogadnov, Yu.L. Pivovarov, T.A. Tukhfatullin - Half-Wave-Crystal Channeling of Relativistic Heavy Ions and Possible Applications
- PS3-15 Yu.L. Eikhorn, K.B. Korotcheno, S.B. Dabagov - The Crystal Surface Optimal Geometry to Reflect of a Charged Particles Beam
- PS3-16 R.M. Nazhmudinov, A.S. Kubankin, P.V. Karataev, I.A. Kishin, A.V. Vukolov, A.P. Potylitsyn, P.N. Zhukova, V.A. Nasonova - Characteristic X-Ray Wire-Scanner for Fast Charged and Neutral Particle Beams Diagnostics
- PS3-17 E. Kurnikov, A. Dik, S. Dabagov - Computer Simulations for Charged Particles Channeling in Capillaries
- PS3-18 T. Vaughan , V. Antonov, P. Karataev, R. Kieffer, T. Lefevre, K. Lekomtsev, S. Mazzoni, G.Naumenko, A.Potylitsyn, M. Shevelev - Application of Split-Ring Resonator Based Metematerials in Accelerators
- PS3-19 A. Oleinik, P. Karataev, A. Kubankin, A. Shchagin - Development of New Approaches to Increase the Intensity of X-ray Radiation in a Pyroelectric Source
- PS3-20 Y. Li, G. Xia, Y. Zhao - Studies of Beam-Channel Misalignment in the Hollow Channel Plasma Accelerator in Nonlinear Regime
- PS3-21 I.A. Ashanin, S.M. Polozov, Y.D. Kluchevskaia - Injector Linac Prototype of the Russian 4th Generation Specialized Synchrotron Radiation Source SSRS-4 as a Possible Compact XFEL
- PS3-22 Y.D. Kluchevskaia, S.M. Polozov - Optimal RF-Photogun Parameters for the Compact XFEL Based on the New Linac-Injector Prototype
- PS3-23 T. Kulevoy, A. Tishchenko, D. Liakin - Status of Diagnostic and Control System Development for Russian New Light Source Project SSRS-4

- PS3-24 A. Curcio, M. Bergamaschi, F. Bisesto, V. Dolci, D. Gamba, L. Garolf, W. Farabolini, T. Lefevre, S. Mazzoni, M. Petrarca, R. Corsini - Studies on mm-Waves at CLEAR
- PS3-25 L. Gevorgian, A. Shamamyan, H. Gevorgyan, K. Gevorgyan - FEL Gain Formed in Sectional Undulator
- PS3-26 Yu. A. Goponov, S.A. Laktionova, R.A. Shatokhin, K. Sumitani, Y. Takabayashi, I.E. Vnukov - On the Use of Electron Diffracted Diffraction Radiation at X-ray Mirrors for Electron Beam Parameters Diagnostics
- PS3-27 G. Naumenko, A. Potylitsyn, M. Shevelev, D. Shkitov, A. Vukolov, V. Bleko - Monochromatic Coherent Grating Transition Radiation of a Relativistic Electron Bunch Train

20:00 **Social Dinner - Restaurant Hotel Continental Ischia**

Friday, 28 September - Hotel Continental Ischia

S5: Novel Sources: FEL/Laser/Plasma Channels

Session 5.3 **Chair: S. Dabagov**

9:00-9:30 **A. Spallone**

Radiotherapy and Neurosurgery for the Treatment of Brain Lesions. An Uneasy but Necessary Joint Collaboration (*Invited*)

9:30-10:00 **S. Polozov**

Status of the Russian 4th Generation Specialized Synchrotron Radiation Source SSRS-4 (*Invited*)

10:00-10:30 **L. Serafini**

MariX/BriXS Design Study: a Combined Ultra-High Flux X-ray FEL and Compton Source (*Invited*)

10:30-10:45 **V. Verzilov**

Prospects of a THz/IR FEL at TRIUMF Laboratory

10:45-11:00 **C. Vaccarezza**

Beam Dynamics Studies for the X-Band Linac of the EUPRAXIA@SPARC_LAB Project

Coffee break (20 min)

W2 mini-workshop: AGTaX: Advanced Generation of THz and X-ray beams

Session W2.1. **Chair: A. Aryshev**

11:20-11:50 **A. Tishchenko**

Dispersion Relations for Different Types of Radiation from Periodic Structures: Similarities and Differences (*Invited*)

11:50-12:20 **S. Ghosh**

Delhi Light Source: a Compact FEL-THz facility (*Invited*)

12:20-13:05 **Channeling 2018: Closing**

Lunch break (1 h 25 min)

W2 mini-workshop: *AGTaX: Advanced Generation of THz and X-ray beams*
Session W2.2. Chair: A. Tishchenko

- 14:30-15:00 **A. Aryshev**
Self-Similar Electron Beam: Prospects, Demands, and Applications (*Invited*)
- 15:00-15:15 **A. Irizawa**
Novel Responses of Solids by Terahertz Free Electron Laser
- 15:15-15:30 **S. Polozov**
Longitudinal Motion Stability of Electrons inside the Plasma Channel of LPWA
- 15:30-15:45 **L. Yan**
The THz Radiation Development Based on High Brightness Linac at THU
- 15:45-16:00 **A. Potylitsyn**
First Observation of the Grating Diffraction Radiation
- 16:00-16:15 **A. Ponomarenko**
Wakefield Acceleration Based on Smith-Purcell Effect in Corrugated Dielectric Capillary
- 16:15-16:30 **D. Danilova**
Parametric X-ray Radiation in Crystals with Locally Disturbed Characteristics

Coffee break (20 min)

16:50-18:00 **Discussion Table**