

EPAC'08

Scope of Sessions and Associated Classifications

Main Classification 1: Circular Colliders **SPC Coordinator: Rüdiger Schmidt, CERN**

Session 1 is devoted to synchrotrons and storage rings for physics. It includes lepton and hadron colliders presently in operation, under construction or under development. Among the subjects for this session are operating experience and performance limitations, upgrade plans, accelerator physics and technology issues specific to a certain collider and the design and R&D for future projects.

Sub-classifications associated with Main Classification 1 are:

- A01 Hadron Colliders
- A02 Lepton Colliders
- A14 Advanced Concepts
- A15 High Intensity Accelerators (from High Intensity Proton Machines)
- A17 Electron-Hadron Colliders
- A20 Accelerators and Storage Rings, Other
- T12 Beam Injection/Extraction and Transport
- T19 Collimation and Targetry

Main Classification 2: Synchrotron Light Sources and FELs **Coordinator: Carlo Bocchetta, Instrumentation Technologies**

Session 2 covers Light Sources based on synchrotron storage rings and linacs including Energy Recovery Linacs (ERLs) and FELs. These light sources incorporate advanced insertion devices, including high quality planar and helical field undulators based on permanent magnet or electromagnet technologies. Associated accelerator systems, such as injectors, booster synchrotrons and high brightness electron sources can also be proposed for this Session, as can laser systems and their use. Papers presented can be project descriptions or cover individual aspects of light sources. Both theoretical and experimental results are solicited.

Sub-classifications associated with Main Classification 2 are:

- A05 Synchrotron Radiation Facilities
- A06 Free Electron Lasers
- A14 Advanced Concepts
- A16 Energy Recovery Linacs (ERLs)
- T02 Lepton Sources
- T12 Beam Injection/Extraction and Transport
- T15 Undulators and Wigglers
- T24 Lasers

Main Classification 3: Linear Colliders, Lepton Accelerators and New Acceleration Techniques **Coordinator: Reinhard Brinkmann, DESY**

Session 3 is devoted (i) to all aspects of the design of linear colliders, neutrino factories and muon colliders, their challenges and limitations (accelerator physics, accelerating systems, beam delivery systems, etc.) together with the status and experimental results of the test facilities; and (ii) to new concepts of accelerating techniques which may overcome the present limitations due to size and cost of future large accelerators or give access to very new beam characteristics.

Sub-classifications associated with Main Classification 3 are:

A03 Linear Colliders
A08 Linear Accelerators
A09 Muon Accelerators and Neutrino Factories
A10 Damping Rings
A12 FFAG, Cyclotron
A13 New Acceleration Techniques
A14 Advanced Concepts
A15 High Intensity Accelerators (from High Intensity Proton Machines)
T02 Lepton Sources
T19 Collimation and Targetry

Main Classification 4: Hadron Accelerators
Coordinator: David Findlay, STFC/RAL/ISIS

Session 4 is devoted to designing, developing, upgrading, constructing and commissioning low-, medium- and high-energy hadron accelerators, excluding hadron colliders. The session includes ion sources, electrostatic accelerators, proton and ion linear accelerators, proton and ion synchrotrons, radioactive beam facilities, antiproton accumulators and collectors, ion accumulator and storage rings, cyclotrons, synchrocyclotrons, FFAGs and any other similar machines. Both low- and high-intensity machines are covered, as are all relevant aspects of high-intensity fixed-target machines such as proton drivers for spallation neutron sources, neutrino factories, etc.

Sub-classifications associated with Main Classification 4 are:

A04 Circular Accelerators
A07 Electrostatic Accelerators
A08 Linear Accelerators
A11 Beam Cooling
A12 FFAG, Cyclotrons
A14 Advanced Concepts
A15 High Intensity Accelerators
A19 Secondary Beams
T01 Proton and Ion Sources
T12 Beam Injection/Extraction and Transport
T19 Collimation and Targetry

Main Classification 5: Beam Dynamics and Electromagnetic Fields
Coordinator: Andrzej Wolski, Liverpool University and Cockcroft Institute

Session 5 includes reviews and progress reports on general aspects of electromagnetic interaction of charged particle beams in accelerators and storage rings. It

covers linear and non-linear beam optics, modeling of externally applied or beam-generated electro-magnetic fields, as well as theory, observations and simulations of single-particle dynamics and collective effects, both coherent and incoherent. The emphasis is on deepening the understanding of fundamental processes or limitations governing beam dynamics and uncovering possible new mechanisms relevant to accelerator design and performance, independent of technological or project-specific aspects.

Sub-classifications associated with Main Classification 5 are:

D01 Beam Optics – Lattices, Correction Schemes, Transport

D02 Non-linear Dynamics – Resonances, Tracking, Higher Order

D03 High Intensity – Incoherent Instabilities, Space Charge, Halos, Cooling

D04 Instabilities – Processes, Impedances, Counter-measures

D05 Code Developments and Simulation Techniques

Main Classification 6: Instrumentation, Controls, Feedback & Operational Aspects

Coordinator: Kay Wittenburg, DESY

Session 6 is devoted to measurement and control of the beam parameters in particle accelerators including beam diagnostics and instrumentation, beam feedback systems, timing and synchronization schemes and laser-based instrumentation. Included also are contributions on accelerator/storage ring control systems and operational aspects of modern accelerators such as alignment and surveying methods, machine protection systems, and issues pertaining to reliability and operability and to radiation monitoring and safety.

Sub-Classifications associated with Main Classification 6 are:

T03 Beam Diagnostics and Instrumentation

T04 Accelerator/Storage Ring Control Systems

T05 Beam Feedback Systems

T17 Alignment and Survey

T18 Radiation Monitoring and Safety

T22 Machine Protection

T23 Timing and Synchronization

T24 Lasers

Main Classification 7: Accelerator Technology Main Systems

Coordinator: Francisco Pérez, Cells

Session 7 is devoted to contributions on the design, construction, testing and performance of accelerator components or subsystems, with emphasis on technological aspects and methods. Special attention is due to technological developments that allow to improve accelerators from the point of view of performance, size or cost effectiveness.

Sub-classifications associated with Main Classification 7 are:

T06 Room Temperature RF

T07 Superconducting RF

T08 RF Power Sources

T09 Room Temperature Magnets
T10 Superconducting Magnets
T11 Power Supplies
T13 Cryogenics
T14 Vacuum Technology
T16 Pulsed Power Technology
T20 Infrastructures
T22 Machine Protection
T23 Timing and Synchronization
T24 Lasers
T25 Low level RF
T28 Subsystems, Technology and Components, other

Main Classification 8: Applications of Accelerators, Technology Transfer and Relations with Industry

Coordinators: Hartmut Eickhoff (Applications), Michael Peiniger (TT & Relations with Industry)

Scope of Applications

Session 8 includes contributions with emphasis on applications of accelerators rather than on accelerator aspects

Scope of TT Session

The Technology Transfer Session, is mainly addressed to Accelerator Laboratories to improve the methods and strategies for TT, and to Industry to create business out of TT. It covers relevant issues for successful TT, structures needed to promote TT, technology incubator for start-up companies, and intellectual property and patenting.

Scope of Session on Relations with Industry

The Session on Relations between Laboratories and Industry is addressed to both sides in order to improve performance and the achievement of the contract goals through the creation of mutual understanding, contractual matters, joint research and development, measures to improve contract goals.

Sub-classifications associated with Applications are:

U01 Medical Applications
U02 Materials Analysis and Modification
U03 Transmutation and Power Generation
U04 Other applications

Sub-classifications associated with TT and Industrial Relations

T26 Technology Transfer
T27 Industrial Collaboration