Low Emittance Rings Workshop – 2011

The goal of the workshop is to bring together experts from the scientific communities working on low emittance lepton rings. This includes damping rings, test facilities for linear colliders, B-factories and electron storage rings. The theme will be common beam dynamics and technology challenges for producing and controlling ultra-low emittance beams and the participants will benefit from the experience of colleagues who have designed, commissioned and operated such rings. This is the second in a series of workshops initiated in 2010 (http://ler2010.web.cern.ch), by the joint CLIC/ILC working group on damping rings. During the 1st workshop and subsequent discussions, it was found that the state of the art in the design of accelerator systems in X-ray storage rings approaches the goals of linear collider damping rings and future e+/e- circular collider upgrade projects. This workshop specifically targets the strengthening of interactions within the low emittance ring community by forming a LOWεRING collaboration network.

Workshop sessions will include:

Low emittance optics design and tuning

- Low emittance cells design
- Non-linear optimization
- Minimization of vertical emittance
- Collective effects reduction through lattice design

Collective Effects and beam instabilities

- Electron cloud effect and fast ion instability
- Intrabeam Scattering
- Impedances
- Coherent Synchrotron Radiation

Low emittance Ring Technology

- Insertion devices, magnet design and alignment
- Fast kicker design
- RF systems
- Instrumentation for low emittance
- Feedback systems
- Vacuum technology

Proposals for contributions to the workshop should be addressed to one of the organizers or the chairman of the Scientific Program Committee, Dr. Hermann Schmickler (Hermann.Schmickler@cern.ch).