Impedance workshop in Erice, Sicily
April 24\textsuperscript{th} to April 28\textsuperscript{th} 2014

Review theories, simulations, bench measurements \textit{and mitigations}
- Space charge and resistive wall impedance
- Collimators, kickers
- Cavities
- Steps and tapers
- Holes, roughness, coatings, small obstacles
- Instrumentation

Chairmen: Elias Métral and Vittorio Vaccaro

Application deadline: 31\textsuperscript{st} January 2014
ICFA mini-Workshop on “Electromagnetic wake fields and impedances in particle accelerators”, Erice, Sicily, from April 24th to April 28th, 2014

PRELIMINARY SCIENTIFIC PROGRAMME AND TIMELINE

Wednesday 23/04/2014: Arrival

Thursday 24/04/2014:
- Session 1: General introductory and review talks
- Session 2: Impedance-induced effects and challenges for new projects
- Session 3: Space charge and resistive-wall (theory, simulation, measurement and mitigation)
- Session 4: Collimators and kickers (theory, simulation, measurement and mitigation)
- Poster session at the end of the afternoon

Friday 25/04/2014:
- Session 3: Space charge and resistive-wall (theory, simulation, measurement and mitigation)
- Poster session at the end of the afternoon

Saturday 26/04/2014:
- Session 5: (RF cavities (theory, simulation, measurement and mitigation)
- Session 6: Steps and tapers (theory, simulation, measurement and mitigation)
- Poster session at the end of the afternoon

Sunday 27/04/2014: Full day excursion

Monday 28/04/2014:
- Session 7: Holes, roughness, small obstacles and nonconformities (theory, simulation, measurement and mitigation)
- Session 8: Instrumentation (BPMs, striplines, etc.) (theory, simulation, measurement and mitigation)
- Poster session at the end of the afternoon

Tuesday 29/04/2014: Departure

INTERNATIONAL ADVISORY COMMITTEE

http://indico.cern.ch/conferenceDisplay.py?ovw=True&confId=287930

Application deadline: 31st January 2014
Preliminary list of topics to be discussed:

- Historical review
- The birth of the Longitudinal Impedance
- The Transverse impedance
- Dissipative equipment. Perturbative techniques
- Impedance of lumped equipment
- Generalization of the impedance concepts
- The Panofsky-Wenzel theorem
- Does the impedance satisfy the physical realizability theorem?
- The birth of the bench measurements
- Nassibian and Sacharer and the stretched wire method
- Potentiality and limits of the stretched wire method
- Above and below the cut-off frequency of the pipes
- The mode matching technique (MM)
- Combined use of analytical and numerical calculations
- Review of the most common CAD
- Alternative bench measurements
- Bench measurements from the highly relativistic beam approach towards low energy beam (slow beam simulation)
- Measurements of transverse impedance (the loop techniques at very low frequencies)
- Two wire vs displaced wire vs wire on image plane technique
- Limits of validity and caveats for the wire method
- Where do we need these days really the cavity perturbation method (for R/Q determination)?
- How about mitigation techniques for too high impedances?
- Loss factor measurements with the wire method
- Real time pulses and synthetic pulses
- Time domain gating
- Advantages and disadvantages of long tapers
- Etc.