

*The Physics and Applications of
High Brightness Electron Beams:
The Scientific Program*

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Thanks to Program Committee

- ⊕ C. Pellegrini (UCLA)
- ⊕ W. Barletta (LBNL)
- ⊕ M. Ferrario (INFN-LNF)
- ⊕ P. Emma (SLAC)
- ⊕ G. Krafft (JLAB)
- ⊕ D. Dowell (SLAC)
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Thanks for Institutional Support

Host: E. Majorana Center

⊕ ANL-APS

⊕ UCLA

⊕ Univ. Chicago

⊕ DESY

⊕ ENEA

⊕ INFN

⊕ LBNL

⊕ SLAC

⊕ Univ. Tokyo

Enabled young and/or underfunded scientists
to contribute to program

Workshop charge

The goals of this workshop are: to provide an opportunity to discuss the generation, manipulation, modeling and experimental characterization of **high brightness electron beams**, and the **underlying methods** linking the physics of these beam systems to the physics of **advanced methods of acceleration**, and **electromagnetic radiation generation** from relativistic electron beams interacting with strong electromagnetic fields.

Program structure and location

- ⊕ Plenary session (San Domenico, large hall)
- ⊕ WG 1 - Sources, including photoinjectors and plasma-laser sources (San Domenico, large hall)
- ⊕ WG 2 - Manipulation and diagnostics of high brightness beams (San Francesco, large hall)
- ⊕ WG3 - Theory and modeling, simulation challenge (San Domenico, small hall)
- ⊕ WG4 - Applications of high brightness beams (San Domenico, small hall)

Talk scheduling

- ⊕ 28 Plenary speakers (30 min)
- ⊕ 50 submitted talks (abstracts + titles)
- ⊕ First day schedule set, chosen from submitted abstracts
- ⊕ If you intend to submit a talk, please talk to the appropriate WG leader, before or at the start of today's WG session
- ⊕ "Final" schedule, including joint sessions, set by tomorrow AM.

Monday: Working group 1

- ⊕ Smedley - Superconducting Photocathodes
- ⊕ Schmerge - Time dependent emission from metal cathodes
- ⊕ Dowell - Time dependent emission from metal cathodes on the fs-time scale
- ⊕ Palmer - Quantum Efficiency and Topography of Heated and plasma-cleaned Copper Photocathode surfaces
- ⊕ Dowell - H-beam and H-plasma cleaning of metal cathodes
- ⊕ Gatti - Quantum Efficiency Measurements of Mg films produced by Pulsed Laser Ablation Deposition for Bright Electron Sources

Monday: Working group 2

- ⊕ Kamps - Laserwire Based Beam Profile Monitor
- ⊕ Tron - New principles in photochronography of femtosecond resolution
- ⊕ Andonian - Compression Studies at the ATF with the BNL/UCLA Chicane
- ⊕ Dunning - Overview of the LCLS Single-Shot Relative Bunch Length Monitor System

Monday: Working group 3

- ⊕ Rosenzweig - Optimum Beam Creation in Photoinjectors using Space-charge Expansion I: Theory and Simulation
- ⊕ Litvinenko - Preservation of Beam Quality in ERLs
- ⊕ Migliorati - Simulations of Coherent Synchrotron Radiation Effects on Beam Dynamics

Monday: Working group 4

- ⊕ Uesaka - Medical Application of Multi-beams Compton scattering Monochromatic Tunable Hard X-ray Sources
- ⊕ Ogino - Laser Pulse Circulation System for Compact Monochromatic Hard-X-Ray Source
- ⊕ Williams - Status of the Nonlinear Inverse Compton Scattering Experiment at UCLA
- ⊕ Yoder - An Inverse Compton Scattering Radiation Source via Self-Guiding in a Plasma

Publications

- ✦ Proceedings at Erice (as with previous High Brightness series) are published by World Scientific
 - ✦ Deadline: Dec. 15, 2005
- ✦ A special issue of *Physical Review Special Topics - Accelerators and Beams* will be dedicated to papers inspired by/at the workshop
 - ✦ 9 Physical Review quality papers from Sardegna '03