

Topical Course On

FRONTIERS OF PARTICLE BEAMS

South Padre Island, Texas

October 23-29, 1986

This is the second in the international series of courses on specialized or advanced topics on particle accelerators. Its main purpose is to advance education in accelerator science and technology. The School is organized jointly by the CERN Accelerator School and the US Particle Accelerator School, is hosted by the Texas Accelerator Center, and receives support from the U.S. Department of Energy and the National Science Foundation.

PROGRAMAccelerator Physics

Electromagnetic Fields
Phase Space Dynamics
Multiparticle Dynamics
Numerical Techniques
--Field Calculations
--Beam Simulation
Space Charge Dominated Beams
Instabilities in Circular and
Linear Accelerators
Intrabeam Scattering
Beam Cooling: Stochastic and
Electron

Seminars

Advanced Ideas in Diagnostics
Ion Guiding in High Current
Electron Beams
Advanced Cooling Techniques
Hadron Colliders: How Large
Can They Be?
Technology and the Livingston
Curve

Linear Colliders

Optimization of Beam Properties
Fast Beam Damping
Beam Breakup and Emittance Blowup
Beamsstrahlung and Disruption

Synchrotron Radiation

Classical Single Particle Theory
--Power Spectrum
--Angular Distribution
--Radiation Damping
--Quantum Effects

Coherent Radiation

--Spatial and Temporal Correlations
--Low Emittance Electron Bunches
--Optical Klystron
--Free Electron Laser

Acceleration Concepts

High Gradient Fields
rf Power
Acceleration Mechanisms

Information

The Course will be accessible to advanced graduate students, post-doctoral researchers and scientists interested in entering accelerator physics as well as experienced workers in the field. Some acquaintance with the theory and technology of particle accelerators and standard graduate backgrounds in applied mathematics and electromagnetism will be desirable. Previous schools in general accelerator physics organized by CAS and the US School would provide suitable preparation. Persons wishing to attend the above course can obtain further information and application forms from the US Particle Accelerator School, c/o Marilyn Paul, Fermilab/MS125, P.O. Box 500, Batavia, IL 60510 USA. If so desired, European applicants may write to Suzanne von Wartburg, CERN Accelerator School, LEP Division, CH-1211 Geneva 23, Switzerland. Applications must be returned as soon as possible but no later than July 1, 1986. There will be a registration fee of \$175 or equivalent. Participants will be accommodated in the South Padre Island Hilton Resort. Double rooms are available for \$49/night (\$24.50/ea.); single rooms are \$49/night. Participants should arrive by the evening of October 22 and lectures will last till the evening of October 29. All participants will receive a copy of the proceedings. The number of participants is limited to 150.

Administration

P. Bryant, Director of CERN Accelerator School; M. Month, Director of US Particle Accelerator School; F. R. Huson, Director of Texas Accelerator Center; Program Committee: A. Chao, L. Evans, T. Fessenden, V. Granatstein, H. Haseroth, A. Hofmann, I. Hofmann, J. Jowett, G. Lawrence, L. Michelotti, D. Mohl, R. Palmer, S. Peggs, C. Pellegrini, H. Riege, A. Sessler, S. Turner, W. T. Weng, P. Wilson, S. Yu.