

SHORT ACCOUNT OF A VISIT TO THE U.S.A.

June - July 1970

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The amount of ideas and material brought back from a tour of the American accelerators is usually large and varied (though often incomplete). I thought going into details would be far too much for most readers, and not enough for a few of them. I have therefore restricted myself to titles and will be pleased to try and answer the questions of those interested.

BROOKHAVEN

People met

M.Q. Barton - longitudinal instabilities
G.W. Bennett - instrumentation for extraction
L.N. Blumberg - slow extraction, sharing slow extraction and internal target, multiple fast extraction during slow extraction, emittance measurements
R. Frankel - computer utilization
J.D. Fox
J.W. Glenn - operation
J.J. Grisoli
H.C.H. Hsieh - septum magnets
L.E. Repeta - targets, SEC's
L. Senator - electrostatic septum
T. Sluyters - Linac, working conditions, comparison between Brookhaven and CERN
A. van Steenbergen - future operation

Papers brought back

Alternating Gradient Synchrotron, AGS Division Annual Report, April '70

Determination of Accelerator Tune from Perturbed Closed Orbits,
M.Q. Barton, R. Frankel, M. Month, BNL 13570

Energy Deposition in Cryogenic Splitter Magnet, L.N. Blumberg,
AGS DIV 69-7, September 23, 1969

Initial Performance of the AGS Slow External Beam, L.N. Blumberg,
M.Q. Barton, G.W. Bennett, J.D. Fox, J.W. Glenn, H.C.H. Hsieh,
R.J. Nawrocky, A.V. Soukas, AGS DIV 69-8, September 25, 1969

Emittance Measurements in the AGS Slow External Beam, L.N. Blumberg,
M.Q. Barton, J.D. Fox, J.W. Glenn, L.E. Repeta, AGS DIV 69-12,
October 27, 1969

Beam Optics for the Slow Beam Extension, L.N. Blumberg, AGS Division
Technical Note No. 69, October 29, 1969

Feasibility Test: Fast Backleg Beam Deflection, J.G. Cottingham,
G.P. Bagley, AGS Division Technical Note No. 71, December 8, 1969

Voltage Ripple on Slow Beam Extraction Equipment, J.G. Cottingham,
AGS Division Technical Note No. 77, March 25, 1970

A Splitter System for the Slow Extracted Beam, J.J. Grisoli, H.C.H.
Hsieh, AGS Division Technical Note No. 75, March 12, 1970

Measurement of Duty Factor in the Slow External Beam, J.D. Fox,
EP&S Division Technical Note No. 33, April 20, 1970

Betatron Frequency Jump at Transition in the Brookhaven AGS,
E.C. Raka, AGS DIV 70-1, January 5, 1970

A Proposed Profile Detector for Slow External Beams, R.J. Warkentien,
G.W. Bennett, AGS Division Technical Note No. 72, December 31, 1969

G-10 Monitor Telescope, R.J. Warkentien, G.W. Bennett, AGS Division
Technical Note No. 73, February 18, 1970

NAL

People met

- N. Lau - computer for Linac
- E. Malamud - generalities, main ring
- A. Maschke - extraction channel, septa, transfer
- D. Sutter - data acquisition, main ring
- R. Yamada - generalities, magnets, beam sensors

Papers brought back

Drawing of Beam Transfer Area, 0500-LE-6042 C, 16 June, 1970

Design Report, NAL, July 1969

NAL Accelerator Control System Design Philosophy, Alan D. Albert,
October 17, 1968 (partially obsolete)

Improved Nucleon-Meson Cascade Calculations, J. Ranft, T. Borak,
FN-193, 1100.0, November 21, 1969

Rationale for a Choice of Secondary Particle Beams at NAL, A.L. Read,
J.K. Walker, FN 204, 2250, February 1970

Main-Ring Beam Sensing, F.C. Shoemaker, TM-150, 0840, January 23, 1969

ARGONNE

People met

S.M. Marcowitz - emittance measurements
R.L. Martin - generalities, resonant extraction
C. Potts - operation
L.G. Ratner - extractions

Papers brought back

Resonant Extraction for the ZGS, C.S. Chien, T.K. Khoe, CSC/TKK-1,
March 15, 1968

A Procedure Used to Determine the ZGS External Proton Beam Phase-
Space Properties, G.A. Concaildi, F. Hornstra, Jr., H. Lucks,
S.M. Marcowitz, GAC/FH/HL/SMM-1, April 12, 1968

Procedures Necessary to Execute Program WIEMNY, G.A. Concaildi,
GAC-1, April 29, 1969

A Nondestructive Measurement of Phase-Space Properties of the 50 MeV
Proton Beam Between the Linac and the ZGS, G. Concaildi, R. George,
S. Marcowitz, R. Sanders, GC/RG/SM/RS-1, December 3, 1969

The Determination of Beam Phase-Space Properties by the Iterative
Reduction of Residues, G.A. Concaildi, R.D. George, S.M. Marcowitz,
GAC/RDG/SMM-1, March 5, 1970

The Relation Between Beam Distribution and Phase-Space Properties,
G.A. Concaildi, S.M. Marcowitz, GAC/SMM-2, March 11, 1970

Derivation of the Relation Between Septum Magnet Gap and Minimum
Vertical Beam Spot Size at F_0 in the ZGS External Proton Beam,
S.M. Marcowitz, SM-11, November 13, 1968

SLAC

People met

J. Harris - switchyard, positron-electron accumulation rings
K. Mallory - generalities and controls
V. Price - instrumentation
R. Vetterheim - operation of the switchyard
D.R. Walz - targets and dumps

Papers brought back

Water Cooled Beam Dumps and Collimators for the Stanford Linear Accelerator, D.R. Walz, J. Jurow, E.L. Garwin, SLAC-PUB 95, submitted to IEEE Particle Accelerator Conference, Washington, March 1965

Irradiation of Highly Radiation-Resistant Organic Lubricants and a High Temperature Paint, D.R. Walz, E.J. Seppi, SLAC-TN-67-13, April 1967

500 kW Aluminium Beam Dump East and Related Changes, D.R. Walz, SLAC-TN-67-31, December 1967

Radiolysis and Hydrogen Evolution in the A-Beam Dump Radioactive Water System, D.R. Walz, E.J. Seppi, SLAC-TN-67-29, October 1969

Power and Flow Test of a Prototype of the Sphere Beam Dump, D.R. Walz, L.R. Lucan, SLAC-TN-69-4, February 1969

400-kW Sphere Beam Dump, D.R. Walz, SLAC-TN-68-7, April 1968

The "Sphere Dump" - A New Low-cost High-power Beam Dump Concept and a Catalytic Hydrogen Recombiner for Radioactive Water Systems, D.R. Walz, L.R. Lucas, SLAC-PUB-555, submitted 1969 National Particle Accelerator Conference, Washington, March 1969

BERKELEY

People met

R.W. Allisson - scintillator screens and their fabrication
K. Crebbin - resonant extraction
G. Lambertson - electron ring accelerator
A. Rindi - wire chamber detectors

LOS ALAMOS

People met

H.S. Butler - accelerator controls with computer

D. Cochran - targets
D.R. Machen - data acquisition
M. Trump - beam instrumentation

Papers brought back

Drawing of a "band saw target"

Photo of a water cooled graphite target

A Computer-based Accelerator Control System, H.S. Butler, to be presented at the Instrument Society of America Conference in Philadelphia, October 1969

A Compact Data Acquisition and Control Terminal for Particle Accelerators, D.R. Machen, R.A. Gore, D.W. Weber

LAMPF Status Report, L. Rosen, Proceedings of the 3rd LAMPF Users' Meeting, October 29, 1969

Ch. Steinbach

Distribution

MPS Scientific Staff