## **AIP Conference Proceedings**

Series Editor: Hugh C. Wolfe

No. 42

## **Higher Energy Polarized Proton Beams**

(Ann Arbor, 1977)

**Editors** 

A.D. Krisch

A.J. Salthouse

University of Michigan

American Institute of Physics

New York 1978

## TABLE OF CONTENTS

Introduction and Summary	
Workshop schedule	1
Introduction (A.D. Krisch and A.J. Salthouse)	3
List of participants	6
Overall Summary (A.D. Krisch)	7
Individual Summaries	19
Experimental Sessions (O. Chamberlain and M.L. Marshak)	20
Summary of the Theory Group (F.E. Low)	35
Report of Working Group on Accelerator Problems (E.D. Courant and L.G. Ratner)	41
Polarized Ion Sources and Low Energy Collector Rings (H.F. Glavish)	47
Polarimeters: A Summary (J.B. Roberts)	67
Polarized Proton Beams Produced by Hyperon Decay: Summary of Discussions (G. Fidecaro)	87
Reviews	93
Acceleration and Storage of Polarized Beams, A Review (E.D. Courant)	94
Depolarization during Acceleration and Storage of Polarized Protons and Deuterons (E.D. Courant and L.G. Ratner)	101
Topics to be Studied for Storing a Polarized Beam (L.C. Teng)	103
Theory of Spin Dependence at Very High Energies, a Review (G.H. Thomas)	105
Theory of High Energy Spin Dependence (F.E. Low and G.H. Thomas)	117
Experiments on Spin Dependence at Very High Energy, a Review (M.L. Marshak)	118
Experiments on High Energy Spin Dependence (M.L Marshak)	•132
Polarized Proton Beams Produced by Hyperon Decay at Very High Energy (G. Fidecaro)	133
Polarimeter Study Group (J.B. Roberts)	135
Polarized Ion Sources and Low Energy Storage	136

Appendices	141
Convention for Spin Parameters in High Energy Scattering Experiments (J. Ashkin, E. Leader, M.L. Marshak, J.B. Roberts, J. Soffer, G.H. Thomas)	142
What is Polarization? (L. Michel)	147
Possible Experiments with Polarized Neutrons at the ZGS and at FNAL (L. Jones)	158
One Photon Exchange Processes and the Calibration of Polarization of High Energy Protons (B. Margolis and G.H. Thomas)	173
Isospin Bounds on $\pi N$ and $NN$ Elastic Polarizations at High Energies (C. Bourrely, J. Soffer, and L. Michel)	178
Day by Day Mini-Summaries (A.J. Salthouse)	182
Index	208