Proceedings of the Symposium on Future Polarization at Fermilab

Fermi National Accelerator Laboratory
Batavia, Illinois
June 13-14, 1988

Organizing Committee

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J. Morfin - Fermilab
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PREFACE

This is the second symposium held to stimulate new ideas concerning polarized beams at Fermilab energies and related physics. The first one was held in 1977 at Argonne National Laboratory when the Fermilab polarized beams were in the design stage.

In this Symposium we aimed to discuss recent physics results from CERN, Brookhaven, Fermilab, and Serpukhov, theoretical interpretations, and future polarization physics. We believed that the Symposium was an excellent opportunity for theorists and experimenters to get together to develop ideas on polarization physics at high energies. The topics discussed in the Symposium were fresh and stimulating, and generated useful information and new thoughts.

The excellent choice of speakers and topics were made after enthusiastic work by the members of the Organizing Committee that included E. Berger, D. Cossairt, J. Lach, J. G. Morfin, A. L. Read, and A. Yokosawa. We would especially like to thank J. Bjorken and L. Lederman for urging us to cover the broad range of physics, not just concentrating on local interests. This proved to be essential.

We wish to acknowledge the support the Symposium received from the Fermilab management. The Symposium could not have succeeded without the assistance of Phyllis Hale and Joy Perington.

The Editors

E. Berger, J. G. Morfin, A. L. Read, and A.Yokosawa

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POLARIZATION SYMPOSIUM INTRODUCTION
LEON LEDERMAN

A couple of quotations:

"Spin is a Slippery Thing," by I. I. Rabi to Leon Lederman (1952)

"The Concept of Spin is Both Intriguing and Extremely Difficult" by C. N. Yang (1982).

I would like to welcome all of you to the Symposium on Future Polarization Physics at Fermilab. I regard the fixed target program at Fermilab to be of great scientific importance. It provides unique tests of theory which deserve pursuit and is complementary to the colliding beams program in many ways. Thus, the Fermilab fixed target program is planned to be a cornerstone of the high energy physics effort for many years to come (at least a decade!), even up to and beyond the initial operation of the SSC.

Over the past few years, a number of interesting and surprising physics results involving spin effects have been observed both here at Fermilab and elsewhere. This area of the field appears to be overflowing with an increase in excitement unheard of even a few years ago. I can see from the size of this gathering that this excitement continues. As you know, during the recent fixed target run we commissioned a new polarized proton/antiproton beam based on lambda/antilambda decay. Though the available running time was short, the principle of operation was confirmed and some useful physics data were collected. A major goal of this symposium is to explore how to use this new facility, along with others we have already constructed, to the maximum scientific benefit in the study of spin effects.

The future development of facilities for the study of spin physics could include higher energies, and the use of a variety of techniques. The actual implementation of such developments depends, in large measure, on the interest shown in such efforts by a broad spectrum of the user community as well as on the details of the physics revealed by the experiments themselves. I encourage your ingenuity in suggesting new techniques for exploring the physics questions.

I wish you a successful symposium. Aki, I turn the symposium over to you.

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