

THE HERMES EXPERIMENT

A Personal Story

This book describes the story of how a collaboration of several hundred physicists from Europe and North America formed in 1988 to design, construct, install, commission and operate, for the years 1995–2007 the technically innovative HERMES experiment at the DESY laboratory in Hamburg, Germany to study the spin structure of the fundamental structure of matter. The authors begin by introducing the fascinating world of subatomic physics and relate their personal story of how the HERMES experiment came about. Guided by the exciting idea to use a new type of target internal to an electron storage ring, the HERMES collaboration was born to realize this innovative experimental approach at the new HERA accelerator at DESY. The book describes the technical design of HERMES; the successful effort to secure the necessary funds to construct the experiment in different countries; the fabrication of the different components by the different HERMES institutes; and the story of the installation and commissioning of HERMES in the East Hall of HERA in the hot summer of 1995. Until 2007, when the operation of HERA ceased, the collider ran typically about 9 months per year continuously, during which HERMES data taking shifts were manned to ensure that data of the highest quality were acquired. The book describes the HERMES scientific results, their considerable impact, how HERMES shaped an entire generation of young people into scientific leaders, and ends with a description of the twenty-first century picture of the proton that has subsequently been developed.

The authors played a leading role within the HERMES collaboration. They describe, using non-technical language, the various phases of the thirteen years of running, the social life in such an international collaboration, and their personal reminiscences over several decades.

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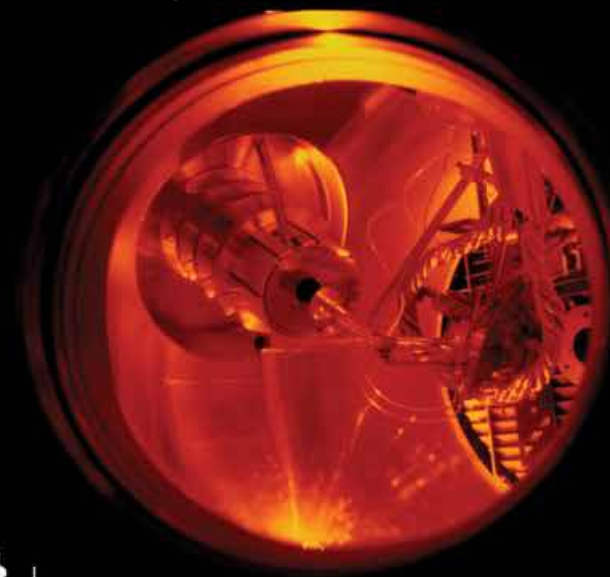
THE HERMES EXPERIMENT
A Personal Story

Richard Milner
Erhard Steffens



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Contents:

- Quest to Understand the Fundamental Structure of Matter
- The Proton's Spin
- HERMES: A New Way to Study the Origin of Proton and Neutron Spin
- Realizing the HERMES Experiment
- HERMES Scientific Output
- Building on the Legacy of HERMES
- HERMES Collaboration
- ***Appendices:***
 - Primer on Units, Scientific Notation, and Technical Terms
 - List of Acronyms
 - A Short History of Spin

228 pages, 80 figures

Available on Amazon

eBook has many more color figures

Three Questions

- What is the intended audience?
- How did we arrive at the decision to write the book?
- What were the impacts of your research when HERMES began in 1987, when it finished data taking in 2007, and today?

HERMES Book Launch

To celebrate the release of *The HERMES Experiment: A Personal Story* by Richard Milner and Erhard Steffens, World Scientific Publishing invites you to join the virtual book launch with the two authors as they talk about the book and recall their experience working on the HERMES experiment for over a decade. They will discuss the inception and commissioning of HERMES, its scientific results, and many other facets of the international collaboration, followed by a Q&A session.

Date & Time: Aug 11, 2021, 10 am (EDT) / 4 pm (CEST).

Sign up at the link:

<https://us02web.zoom.us/meeting/register/tZludu2qrz8jH9ErVMn9UOiEkDjICMgO1yip>

HERMES collaborators particularly welcome!