

Preface

In December 2009, the symposium *50 years of Nobel Memories in High-Energy Physics* took place at CERN, and many Nobel laureates and distinguished physicists and engineers in high-energy physics participated. The symposium commemorated the 50 years between the commissioning of the CERN Proton Synchrotron (CPS) in 1959, the most important project of the infant CERN laboratory, and the start-up of the Large Hadron Collider (LHC), CERN's current flagship accelerator at the forefront of particle physics research at the highest energies. This period also included the Intersecting Storage Rings (ISR), the Super Proton Synchrotron (SPS) and the Large Electron-Positron Collider (LEP), all of which had a special place in the pantheon of CERN's machines for discovery.

The aim of this publication is to provide a scientific reference for fellow physicists, as well as a primary source of information for people with an interest in the history of science and particularly that of particle physics. The publication provides elegant insights and chronological details when it comes to reconstructing one of the major scientific achievements of the 20th century—the development and testing of the Standard Model of particle physics—and to going further by searching for new physics beyond. Last but not least, the symposium bears testimony to the pioneering spirit of those days, thus providing encouragement and guidance for the presently active generation of physicists in their major collaborative effort to advance the field decisively again, with the help of the LHC and other particle physics endeavours.

The talks given at this 2-day event were recorded and eventually transcribed, forming the basis of this publication. The original video recordings can be found as part of CERN's digital conference archive. Several contributions have subsequently been significantly expanded and/or rewritten to fit publication in a special issue of the *European Physical Journal H—Historical Perspectives on Contemporary Physics* under the title *CERN's accelerators, experiments and international integration 1959–2009*, with the kind assistance of Prof. Herwig Schopper. The reprints of these articles (rather than the original transcriptions) are included in this volume with the exception of the article by Prof. Jack Steinberger for which

the edited version of the original transcription has been used upon his request for the purpose of this proceedings book.

At the time of the symposium, two of the key people during this golden era were already too ill to attend. Georges Charpak, who was awarded the Nobel Prize in Physics in 1992 for his invention and development of particle detectors, in particular the multi-wire proportional chamber, and Simon van der Meer, who shared the Nobel Prize in Physics of 1984, awarded for his decisive contributions to the SPS Collider project and in particular for the invention of stochastic cooling. They have both sadly passed away since the time of the symposium.

We are privileged to have had contributions at this symposium from some of the key people of this remarkable 50-year period of CERN. We heard directly from them how the achievements of CERN's accelerators and experiments were realised, insight that has taught us about the past and that will be of assistance in discovering new aspects relevant to the future of particle physics.

Geneva, April 2012

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From the PS to the LHC - 50 Years of Nobel Memories in
High-Energy Physics

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2012, VIII, 241 p., Hardcover

ISBN: 978-3-642-30843-7