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Foreword

The international workshop entitled *New Trends in HERA Physics 2003* took place from 28 September to 3 October 2003 at Ringberg Castle, which overlooks Lake Tegernsee in the foothills of the Bavarian Alps, one of the most picturesque locations to be found in the whole of Germany. The castle was built during the first half of the twentieth century by Duke Luitpold in Bavaria (Herzog Luitpold in Bayern), a member of the Wittelsbach family which ruled Bavaria over 800 years, and his friend Friedrich Attenhuber, an all-round artist, architect, and interior decorator. The castle is entirely their creation, from the massive Renaissance-inspired exterior right down to the fittings and furniture, which, in every detail, were designed by Attenhuber himself and executed by native craftsmen. Attenhuber also painted every single picture exhibited in the castle. He found his models in the farmhouses around Lake Tegernsee. The castle embodies all trends of art and styles which dominated the first half of last century, combined with local Alpine originality and the individual creative power of its constructors. According to the Duke's last will, the castle passed into the hands of the Max Planck Society after his death, in 1973. The castle was then transformed into a conference venue, where scientists can exchange their latest ideas and discuss problems with their colleagues from all over the world in beautiful surroundings and in a relaxed mountain atmosphere, high above the daily business activities.

This was the fourth event in a series of Ringberg workshops on HERA physics, which was started in 1997 and was continued in 1999 and 2001. In fact, at the end of these workshops, many participants expressed the opinion that this was a successful endeavour to bring theorists and experimentalists together in order to interpret the latest HERA data, and that it would be useful to organize a follow-up workshop in the same spirit.

On the occasion of the 2003 Ringberg workshop, forty-one experts of elementary-particle physics, both theorists and experimentalists, from twenty-three universities and research institutions in fourteen countries congregated to present their latest results on the various aspects of HERA physics. Specifically, there were sixteen theorists and twenty-five experimentalists, the latter representing the H1, HERMES, and ZEUS collaborations at HERA. The topics included: proton structure function; polarized *ep* scattering; photoproduction of hadrons, jets, and prompt photons; final states in deep-inelastic scattering, with special emphasis on hadrons, jets, resonances, and gluonic mesons; heavy-flavour and charmonium production; elastic and diffractive *ep* scattering; new physics at HERA; and plans for HERA-II and beyond. We hope that the high-energy-physics community will benefit from these proceedings, in which the ongoing efforts in understanding the nature of the strong interactions, with particular emphasis on HERA physics, are documented.

We wish to thank all our friends and colleagues who have contributed to these proceedings. We are indebted to the workshop secretary, Mrs. Rosita Jurgeleit, for her assistance before, during, and after the workshop and to Dr. Annette Holtkamp for her technical assistance in the editorial work. The local costs at Ringberg Castle and the costs for the publication and dissemination of these proceedings were covered in equal parts by the Deutsches Elektronen-Synchrotron at Hamburg and the Max-Planck-Institut für Physik at Munich, which we gratefully acknowledge.

Hamburg, January 2004

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