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Soggetti	Elementary particles (Physics) Quantum field theory Quantum computers Spintronics Quantum physics Elementary Particles, Quantum Field Theory Quantum Information Technology, Spintronics Quantum Physics
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Nota di contenuto	Strong interactions at low energies -- Foundations and scope of chiral perturbation theory -- Aspects of nucleon chiral perturbation theory -- Estimates of low-energy parameters -- Thoughts on large N c QCD -- Pion observables and QCD -- Light hadron physics from the lattice -- Summary of ??-? scattering experiments -- Working group on ?? scattering -- Summary of the two pion threshold and chiral anomaly working group -- Low-energy photon-photon collisions to two-loop order -- Pion and sigma polarizabilities and radiative transitions -- Nucleon polarizabilities -- Pion (Kaon) and sigma polarizabilities -- Report of the working group on nucleon polarizabilities -- Tests of predictions from chiral perturbation theory for ?N scattering -- Pion- nucleon sigma term -- A meson-exchange model of pion-nucleon interaction -- ?N working group summary -- Measurement of the strong interaction shift and width of the 1S levels in pionic hydrogen

and deuterium -- Is isospin symmetry violated in the pion-nucleon sector at threshold? -- Is $f_2^{NN} = 0.0755$? A look at VPI FA93 and new Experimental Results -- Threshold pion photo- and electroproduction in chiral perturbation theory -- Pion-production experiments at NIKHEF -- Pion photoproduction and Compton scattering at Saskatoon (SAL) -- Threshold photo/electro pion production — working group Summary -- Spin physics with polarized electrons: MIT-Bates program -- Recent achievements and future plans at Frascati -- Experiments at the electron accelerator MAMI -- Conclusions.

Sommario/riassunto

Chiral dynamics provides a rigorous and model-independent methodology for making QCD predictions at the confinement scale. This helps particularly in the testing of the standard model. The workshop reported here was focused on theoretical predictions and the measurements of physical processes, analyzing carefully the phenomenology needed to bridge the gap between the two. Besides the lectures, this volume also contains summaries of the working groups on $\pi\pi$ -scattering, πN -interaction, photo/electro-pion-production, and on chiral anomaly. This book is a thorough review of the state of the art and it addresses researchers as well as graduate students.
