

## PREFACE

The twentieth Lake Louise Winter Institute, entitled Fundamental Interactions, was held from February 20–26, 2005 at the Chateau Lake Louise situated in the scenic Canadian Rocky Mountains. The format of the Winter Institute consisted of a mixture of pedagogical talks and short contributed presentations highlighting the latest results from experiments and new developments in theory. As usual, the sessions were held in the morning till noon and in the evening till at least 10:00 p.m. The participants had ample time for informal discussions in the afternoons or over meals. The afternoons were enjoyed by many for recreation and enjoyment of the winter wonderland in the Rockies.

The pedagogical talks focused on recent developments in cosmology. Results on K- and B-decays were critically assessed to bring out the new understanding of the topic. Results that lead to an unveiling of the new phases of QCD were presented. Physics with atomic traps and its impact on fundamental physics was clearly brought out. Finally the future experiments at the LHC and their discovery potential, in particular discovery of Higgs and possibly finding supersymmetric particles, was clearly spelled out. With the complement of contributed talks, a clear view of the present status of particle physics and cosmology was available.

We wish to thank Lee Grimard for a wonderful organisation of the Winter Institute with care, patience and skill. Our sincere thanks go to Suzette Chan for a masterful job of converting the contributions from the various participants into a nice proceedings. The support and help of the staff at the Chateau was available at all times, making it a rather smooth operation.

Finally we wish to thank the Deans of Science at the University of Alberta and Carleton University, the Institute of Particle Physics and TRIUMF for generous financial support. The Physics Department and Theoretical Physics Institute at the University of Alberta deserve a great deal of thanks for providing the infrastructural support that makes the task of arranging the Winter Institute much easier.

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