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The Top Quark & The Electroweak Interaction

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PREFACE

The XXIII SLAC Summer Institute on Particle Physics addressed the physics of the recently discovered top quark, and its connection to the electroweak interaction and to physics beyond the Standard Model. The Institute attracted 227 physicists from 13 countries to SLAC, from July 10 to 21, 1995. The seven-day school portion of the Institute covered many avenues for studying the top quark, from its direct production at hadron colliders and at future electron-positron colliders, to its virtual effects in precision electroweak quantities, in heavy flavor physics, and in the renormalization of supersymmetric theories. Vertex detectors—critical for identifying the b quark decay products of the top—and Cherenkov techniques for particle identification were also reviewed. The traditional format of the school, with morning lectures followed by afternoon discussion sessions, continued to work well, and there was much lively interaction between lecturers and students.

The Institute concluded with a three-day topical conference covering recent developments in theory and experiment; this year, the highlights were the CDF and DØ top quark discovery. Also featured were updated precision electroweak measurements from SLC, LEP, and the Tevatron, heavy quark results from these facilities as well as CLEO, and new photoproduction and deep-inelastic scattering data from HERA.

We are grateful to all speakers for their efforts in preparing clear and stimulating lectures. We also thank the provocateurs for their assistance at the afternoon discussion sessions. Finally, we are indebted to Lilian DePorcel and Jennifer Chan for their hard work in putting together such a smoothly run Institute, as well as these Proceedings.

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