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Nota di contenuto	Contents ; Preface ; I. New Physics in B and K Decays ; 1. Introduction ; 2. CP Violation in the Standard Model ; 3. System of the B Mesons ; 4. Rare Decays ; 5. How Could New Physics Enter? ; 6. ""Golden"" Decays of B Mesons ; 7. Challenging the Standard Model through $B_d \rightarrow \pi K_s$ 8. The $B \rightarrow \pi\pi$ Puzzles and their Implications for Rare K and B Decays 9. Conclusions and Outlook ; Acknowledgments ; References ; II. Physics at the Large Hadron Collider ; 1. Introduction ; 2. Physics Motivations for the LHC ; 3. Basics of Proton-Proton Collisions 4. The Experimental Challenges 5. The ATLAS and CMS Detectors ; 6. Precision Measurements ; 7. The Search for the Standard Model Higgs Boson ; 8. The Search for Supersymmetry ; 9. Other Searches ; 10. Conclusions and Outlook

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 III. Applications of Trapped Atoms for Fundamental Symmetry Studies  
 1. Introduction ; 2. Laser traps for neutral atoms  
 ; 3. Applications of atom traps to fundamental interaction studies  
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 1. Exclusive D Semileptonic Decays 2. CLEO-c  
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 Conclusions ; References ; Direct CP Violation  
 Results from BABAR ; 1. Introduction  
 ; 2. Data Sample and Experimental Methods  
 ; 3. Charge Asymmetry Measurements  
 4. Time-dependent Measurements

Sommario/riassunto

This proceedings volume contains pedagogical lectures on theoretical and experimental particle physics, cosmology and atomic trap physics. It also includes additional contributions that provide up-to-date information on new experimental results from accelerators, underground laboratories, and nuclear astrophysics. This combination of pedagogical talks and topical short talks provides comprehensive information to researchers in the fields of particle physics, cosmology and atomic trap physics. *Sample Chapter(s)*  
 Chapter 1:  
 New Physics in B and K Decays (1,704 KB)  
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