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Nota di contenuto	Introduction to the Standard Model and quark flavour -- The Large Hadron Collider -- The LHCb detector -- Amplitude analysis -- Summary -- Appendix.
Sommario/riassunto	This book highlights two essential analyses of data collected during the LHCb experiment, based on the Large Hadron Collider at CERN. The first comprises the first observation and studies of matter-antimatter asymmetries in two three-body b-baryon decays, paving the way for more precise measurements of the relatively unknown decay properties of b-baryon decays. The second is an analysis of a charged B meson decay to three charged pions, where previously large matter-antimatter asymmetries were observed in a model-independent analysis. Here a model of the decay amplitude is constructed using the unitarity-conserving 'K-matrix' model for the scalar contributions, so as to gain an understanding of how the previously observed matter-antimatter asymmetries arise; further, the model's construction yields the most precise and comprehensive study of this decay mode to date.

