Record Nr. UNINA9910647786603321 Autore Gonzalo Arnau Brossa Titolo First observation of fully reconstructed B0 and Bs0 decays into final states involving an excited neutral charm meson in LHCb. // Arnau Brossa Gonzalo Pubbl/distr/stampa Cham, Switzerland:,: Springer,, [2023] ©2023 **ISBN** 9783031227530 9783031227523 Edizione [1st ed. 2023.] Descrizione fisica 1 online resource (241 pages) Collana Springer theses Disciplina 539.72162 Soggetti Mesons Hadrons - Decay Inglese Lingua di pubblicazione **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references. Introduction -- Theory background -- The LHCb detector -- Analysis Nota di contenuto strategy -- Data samples -- Candidate selection -- Characterisation of backgrounds -- Simultaneous fit -- Signal efficiency -- Systematic uncertainties -- Results. Sommario/riassunto This book presents the latest results on the branching fraction and phase space distribution of B0 and Bs0 decays into final states including excited neutral charm mesons. This work represents four years of research, and the book describes in detail all the necessary steps and techniques required to perform a physics analysis of the data recorded by the LHCb experiment in the years 2016–2018. Although the results presented in this book represent the first measurement of such decays, the text is written in a manner accessible to Ph.D. students and early career researchers. Thus, all the contents included in this book are described in a pedagogical way, including technical details that would allow the results to be reproduced in future. In addition to the methodology used to perform these measurements, the

book also includes a description of the theoretical background required to interpret the results presented, as well as a technical description of the LHCb detector, which provided the data sample used in this study.