Record Nr. UNINA9910346694403321 ATLAS [[electronic resource]]: a 25-year insider story of the LHC **Titolo** experiment / / the ATLAS Collaboration Pubbl/distr/stampa Singapore, : World Scientific Publishing Co. Pte Ltd., ©2019 **ISBN** 981-327-180-9 Descrizione fisica 1 online resource (372 p.) : ill Collana Advanced series on directions in high energy physics;; v. 30 Disciplina 539.7/36 Soggetti Large Hadron Collider (France and Switzerland) - History Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references. Nota di contenuto Towards the ATLAS letter of intent -- The ATLAS detector today --Building up the collaboration -- From the LoI to the detector construction -- Detector construction around the world -- Installation of the detectors and technical coordination -- Trigger, software and computing -- From testbeams to first physics -- Highlights of physics results (2010-2018) -- Towards the high-luminosity LHC -- ATLAS Collaboration: life and its place in society. "This book is written by the ATLAS Collaboration at CERN's Large Sommario/riassunto Hadron Collider (LHC), to document and reflect on its more than 25 years of history. It covers all aspects of this global science project at the forefront of particle physics. The historical part recalls first the early stages of discussions in the community leading to the formation of the collaboration in 1992. In a unique approach, the second part documents the evolution from early detector concepts to the final instrument, covering the technical, financial and human aspects. This includes the phases of construction of detector components in the various institutes around the world as well as their installation and

commissioning in the underground cavern at CERN. An important part

is devoted to the operation of the whole experiment. The book highlights the capabilities and physics accomplishments so far, including the Higgs boson discovery (jointly announced with CMS). It features the various aspects of a broad spectrum of activities needed to arrive at the physics results. The book includes also an outlook to the detector upgrade activities preparing the experiment for the high-

luminosity LHC phase of the next decades. Last but not least, it reveals the human aspects of the large ATLAS community working together pursuing common physics goals. The book is aimed at a broad readership with interest in large science projects and their history, as well as in the human endeavour of a worldwide collaboration."--