1. Record Nr. UNINA9910779353603321

| | |
|---|---|
| Autore | Baggott J. E |
| Titolo | Higgs [[electronic resource] ] : the invention and discovery of the 'God particle' / / Jim Baggott |
| Pubbl/distr/stampa | Oxford ; ; New York, : Oxford University Press, 2012 |
| ISBN | 0-19-165003-X<br>1-282-16671-9<br>9786613809780<br>0-19-165002-1 |
| Descrizione fisica | 1 online resource (300 p.) |
| Disciplina | 539.72<br>539.721 |
| Soggetti | Higgs bosons<br>Particles (Nuclear physics) |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Cover; Contents; About the Author; Preface; Foreword; Prologue: Form and Substance; Part I: Invention; 1 The Poetry of Logical Ideas: In which German mathematician Emmy Noether discovers the relationship between conservation laws and the deep symmetries of nature; 2 Not a Sufficient Excuse: In which Chen Ning Yang and Robert Mills try to develop a quantum field theory of the strong nuclear force and annoy Wolfgang Pauli<br>3 People Will Be Very Stupid About It: In which Murray Gell-Mann discovers strangeness and the 'Eightfold Way', Sheldon Glashow applies Yang-Mills field theory to the weak nuclear force, and people are very stupid about it4 Applying the Right Ideas to the Wrong Problem: In which Murray Gell-Mann and George Zweig invent quarks and Steven Weinberg and Abdus Salam use the Higgs mechanism to give mass to the W and Z particles (finally!)<br>5 I Can Do That: In which Gerard 't Hooft proves that Yang-Mills field theories can be renormalized and Murray Gell-Mann and Harald Fritzsch develop a theory of the strong force based on quark colourPart II: Discovery; 6 Alternating Neutral Currents: In which protons and |

neutrons are shown to have an internal structure and the predicted neutral currents of the weak nuclear force are found, and then lost, and then found again
7 They Must Be Ws: In which quantum chromodynamics is formulated, the charm-quark is discovered, and the W and Z particles are found, precisely where they were predicted to be8 Throw Deep: In which Ronald Reagan throws his weight behind the Superconducting Supercollider, but when the project is cancelled by Congress six years later all that remains is a hole in Texas; 9 A Fantastic Moment: In which the Higgs boson is explained in terms that a British politician can understand, hints of the Higgs are found at CERN, the Large Hadron Collider is switched on, and then blows up
10 The Shakespeare Question: In which the LHC performs better than anyone expected (except Lyn Evans), a year's data is gathered in a few months and the Higgs boson runs out of places to hideEpilogue: The Construction of Mass; Endnotes; Glossary; A; B; C; D; E; F; G; H; I; K; L; M; N; P; Q; R; S; T; U; V; W; Y; Bibliography; Index; A; B; C; D; E; F; G; H; I; J; K; L; M; N; O; P; Q; R; S; T; U; V; W; X; Y; Z

Sommario/riassunto

The hunt for the Higgs particle has involved the biggest, most expensive experiment ever. So exactly what is this particle? Why does it matter so much? What does it tell us about the Universe? Has the discovery announced on 4 July 2012 finished the search? And was finding it really worth all the effort?The short answer is yes. The Higgs field is proposed as the way in which particles gain mass - a fundamental property of matter. It's the strongest indicator yet that the Standard Model of physics really does reflect the basic building blocks of our Universe. Little wonder the hunt and discovery