

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Record Nr.           | UNINA9910465653803321                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Autore                  | Aaronson Scott                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Titolo                  | Quantum computing since Democritus / / Scott Aaronson,<br>Massachusetts Insitute of Technology [[electronic resource]]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Pubbl/distr/stampa      | Cambridge : , : Cambridge University Press, , 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ISBN                    | 1-107-23299-6<br>0-511-97930-4<br>1-107-30101-7<br>1-107-31384-8<br>1-107-30829-1<br>1-107-30537-3<br>1-107-30609-4<br>1-299-25712-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Descrizione fisica      | 1 online resource (xxx, 370 pages) : digital, PDF file(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Disciplina              | 621.39/1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Soggetti                | Quantum theory - Mathematics<br>Quantum computers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Formato                 | Materiale a stampa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Livello bibliografico   | Monografia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Note generali           | Title from publisher's bibliographic system (viewed on 05 Oct 2015).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Nota di bibliografia    | Includes bibliographical references and index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Nota di contenuto       | 1. Atoms and the void -- 2. Sets -- 3. Geodel, turing, and friends -- 4. Minds and machines -- 5. Paleocomplexity -- 6. P, NP, and friends -- 7. Randomness -- 8. Crypto -- 9. Quantum -- 10. Quantum computing -- 11. Penrose -- 12. Decoherence and hidden variables -- 13. Proofs -- 14. How big are quantum states? -- 15. Skepticism of quantum computing -- 16. Learning -- 17. Interactive proofs, circuit lower bounds, and more -- 18. Fun with the Anthropic Principle -- 19. Free will -- 20. Time travel -- 21. Cosmology and complexity -- 22. Ask me anything.<br>Machine generated contents note: 1. Atoms and the void; 2. Sets; 3. Godel, Turing, and friends; 4. Minds and machines; 5. Paleocomplexity; 6. P, NP, and friends; 7. Randomness; 8. Crypto; 9. Quantum; 10. Quantum computing; 11. Penrose; 12. Decoherence and hidden variables; 13. Proofs; 14. How big are quantum states?; 15. Skepticism of quantum computing; 16. Learning; 17. Interactive proofs and more; |

18. Fun with the Anthropic Principle; 19. Free will; 20. Time travel; 21. Cosmology and complexity; 22. Ask me anything.

---

## Sommario/riassunto

Written by noted quantum computing theorist Scott Aaronson, this book takes readers on a tour through some of the deepest ideas of maths, computer science and physics. Full of insights, arguments and philosophical perspectives, the book covers an amazing array of topics. Beginning in antiquity with Democritus, it progresses through logic and set theory, computability and complexity theory, quantum computing, cryptography, the information content of quantum states and the interpretation of quantum mechanics. There are also extended discussions about time travel, Newcomb's Paradox, the anthropic principle and the views of Roger Penrose. Aaronson's informal style makes this fascinating book accessible to readers with scientific backgrounds, as well as students and researchers working in physics, computer science, mathematics and philosophy.

---