Record Nr. UNINA9910822953203321 Autore Huang Kerson <1928-> Titolo Fundamental forces of nature: the story of gauge fields / / Kerson Huang Pubbl/distr/stampa Singapore; Hackensack, NJ, : World Scientific, c2007 **ISBN** 1-281-12177-0 9786611121778 981-277-071-2 Edizione [1st ed.] Descrizione fisica 1 online resource (285 p.) Disciplina 530.1435 Gauge fields (Physics) Soggetti Equations of motion Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and indexes. Nota di contenuto Contents; Preface; Introduction; 1. What Makes the World Tick?; 2. Electromagnetism; 3. The Vacuum is the Medium; 4. Let There be Light; 5. Heroic Age: The Struggle for Quantum Theory; 6. Quantum Reality; 7. What is Charge?; 8. The Zen of Rotation; 9. Yang-Mills Field: Non-Commuting Charges; 10. Photons Real and Virtual; 11. Creation and Annihilation; 12. The Dynamical Vacuum; 13. Elementary Particles; 14. The Fall of Parity; 15. The Particle Explosion; 16. Quarks; 17. All Interactions are Local; 18. Broken Symmetry; 19. Quark Confinement; 20. Hanging Threads of Silk 21. The World in a Grain of Sand22. In the Space of All Possible Theories; Epilogue: Beauty is Truth; Appendix. Nobel Prize in Physics; Name Index; Subject Index Sommario/riassunto Gauge fields are the messengers carrying signals between elementary particles, enabling them to interact with each other. Originating at the level of quarks, these basic interactions percolate upwards, through nuclear and atomic physics, through chemical and solid state physics, to make our everyday world go round. This book tells the story of gauge fields, from Maxwell's 1860 theory of electromagnetism to the 1954 theory of Yang and Mills that underlies the Standard Model of

elementary particle theory. In the course of the narration, the author

introduces people and events in experimental and