Record Nr. UNINA9910784040103321 Autore Grozin A. G Titolo Lectures on QED and QCD [[electronic resource]]: practical calculation and renormalization of one- and multi-loop Feynman diagrams // Andrey Grozin Singapore; ; Hackensack, NJ, : World Scientific, c2007 Pubbl/distr/stampa **ISBN** 1-281-12096-0 9786611120962 981-270-675-5 Descrizione fisica 1 online resource (239 p.) Disciplina 530.14/33 539.7548 Soggetti Quantum electrodynamics Quantum chromodynamics Feynman diagrams 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 (p. 221-222) and index. Nota di contenuto Preface: Contents: Part 1. QED and QCD: 1. One-loop diagrams 3: 2. QED at one loop; 3. QCD at one loop; 4. Two-loop corrections in QED and QCD; 5. On-shell renormalization scheme; 6. Decoupling of heavyparticle loops; 7. Conclusion: Effective field theories; Appendix A Colour factors; Bibliography; Part 2. Multiloop calculations; 8. Massless propagator diagrams; 9. HQET propagator diagrams; 10. Massive onshell propagator diagrams; 11. Hypergeometric functions and multiple values; Bibliography; Index The increasing precision of experimental data in many areas of Sommario/riassunto elementary particle physics requires an equally precise theoretical description. In particular, radiative corrections (described by one- and multi-loop Feynman diagrams) have to be considered. Although a growing number of physicists are involved in such projects, multi-loop calculation methods can only be studied from original publications. With its coverage of multi-loop calculations, this book serves as an excellent supplement to the standard textbooks on quantum field

theory. Based around postgraduate-level lectures given by the