

1. Record Nr.	UNINA9910781028703321
Autore	Paar Hans P
Titolo	An introduction to advanced quantum physics [[electronic resource] /] / Hans P. Paar
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, 2010
ISBN	1-282-68681-X 9786612686818 0-470-68675-8 0-470-66509-2
Descrizione fisica	1 online resource (225 p.)
Collana	New York Academy of Sciences
Disciplina	530.12
Soggetti	Nonlinear theories Quantum theory
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	An Introduction to Advanced Quantum Physics; Contents; Preface; PART 1 Relativistic Quantum Physics; 1 Electromagnetic Radiation and Matter; 1.1 Hamiltonian and Vector Potential; 1.2 Second Quantization; 1.2.1 Commutation Relations; 1.2.2 Energy; 1.2.3 Momentum; 1.2.4 Polarization and Spin; 1.2.5 Hamiltonian; 1.3 Time-Dependent Perturbation Theory; 1.4 Spontaneous Emission; 1.4.1 First Order Result; 1.4.2 Dipole Transition; 1.4.3 Higher Multipole Transition; 1.5 Blackbody Radiation; 1.6 Selection Rules; Problems; 2 Scattering; 2.1 Scattering Amplitude and Cross Section; 2.2 Born Approximation 2.2.1 Schrodinger Equation 2.2.2 Green's Function Formalism; 2.2.3 Solution of the Schrodinger Equation; 2.2.4 Born Approximation; 2.2.5 Electron-Atom Scattering; 2.3 Photo-Electric Effect; 2.4 Photon Scattering; 2.4.1 Amplitudes; 2.4.2 Cross Section; 2.4.3 Rayleigh Scattering; 2.4.4 Thomson Scattering; Problems; 3 Symmetries and Conservation Laws; 3.1 Symmetries and Conservation Laws; 3.1.1 Symmetries; 3.1.2 Conservation Laws; 3.2 Continuous Symmetry Operators; 3.2.1 Translations; 3.2.2 Rotations; 3.3 Discrete Symmetry Operators; 3.4 Degeneracy; 3.4.1 Example; 3.4.2 Isospin; Problems 4 Relativistic Quantum Physics 4.1 Klein-Gordon Equation; 4.2 Dirac

Equation; 4.2.1 Derivation of the Dirac Equation; 4.2.2 Probability Density and Current; 4.3 Solutions of the Dirac Equation, Anti-Particles; 4.3.1 Solutions of the Dirac Equation; 4.3.2 Anti-Particles; 4.4 Spin, Non-Relativistic Limit and Magnetic Moment; 4.4.1 Orbital Angular Momentum; 4.4.2 Spin and Total Angular Momentum; 4.4.3 Helicity; 4.4.4 Non-Relativistic Limit; 4.5 The Hydrogen Atom Re-Revisited; Problems; 5 Special Topics; 5.1 Introduction; 5.2 Measurements in Quantum Physics; 5.3 Einstein-Podolsky-Rosen Paradox 5.4 Schrodinger's Cat 5.5 The Watched Pot; 5.6 Hidden Variables and Bell's Theorem; Problems; PART 2 Introduction to Quantum Field Theory; 6 Second Quantization of Spin 1/2 and Spin 1 Fields; 6.1 Second Quantization of Spin 1/2 Fields; 6.1.1 Plane Wave Solutions; 6.1.2 Normalization of Spinors; 6.1.3 Energy; 6.1.4 Momentum; 6.1.5 Creation and Annihilation Operators; 6.2 Second Quantization of Spin 1 Fields; Problems; 7 Covariant Perturbation Theory and Applications; 7.1 Covariant Perturbation Theory; 7.1.1 Hamiltonian Density; 7.1.2 Interaction Representation 7.1.3 Covariant Perturbation Theory 7.2 W and Z Boson Decays; 7.2.1 Amplitude; 7.2.2 Decay Rate; 7.2.3 Summation over Spin; 7.2.4 Integration over Phase Space; 7.2.5 Interpretation; 7.3 Feynman Graphs; 7.4 Second Order Processes and Propagators; 7.4.1 Annihilation and Scattering; 7.4.2 Time-Ordered Product; Problems; 8 Quantum Electrodynamics; 8.1 Electron-Positron Annihilation; 8.2 Electron-Muon Scattering; Problems; Index

Sommario/riassunto

An Introduction to Advanced Quantum Physics presents important concepts from classical mechanics, electricity and magnetism, statistical physics, and quantum physics brought together to discuss the interaction of radiation and matter, selection rules, symmetries and conservation laws, scattering, relativistic quantum mechanics, apparent paradoxes, elementary quantum field theory, electromagnetic and weak interactions, and much more. This book consists of two parts: Part 1 comprises the material suitable for a second course in quantum physics and covers: Electromagnetism, Relativistic Quantum Mechanics, and the Standard Model of particle physics. Part 2 covers the theory of quantum field theory, including the renormalization group, the theory of gauge interactions, and the theory of the strong, weak, and electromagnetic interactions. The book is intended for advanced undergraduate and graduate students in physics, as well as for researchers in the field.

2. Record Nr.	UNINA9910766894503321
Titolo	Best 2022 Clinical Cases in Intensive Care Medicine : From the ESICM NEXT Committee Clinical Case Contest / / edited by David Pérez-Torres, María Martínez-Martínez, Stefan J. Schaller
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-36398-1
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (XXXIV, 609 p. 80 illus., 60 illus. in color.)
Collana	Lessons from the ICU, Under the Auspices of the European Society of Intensive Care Medicine, , 2522-5936
Disciplina	616.07572076 616.028
Soggetti	Critical care medicine Emergency medicine Respiratory organs - Diseases Cardiology Nursing Intensive Care Medicine Emergency Medicine Pneumology Medicina intensiva Medicina d'urgència Estudi de casos Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Part I. The best clinical cases in severe infections and sepsis -- Principles and management of sepsis -- Endocarditis in an HIV patient. Infection in an immunocompromised patient, the perfect costume in which to hide -- Intraabdominal sepsis. Portal and mesenteric vein thrombosis as first presentation of myeloproliferative disease in a young woman -- Skin or soft tissue sepsis. Necrotizing fasciitis -- Complicated intraabdominal sepsis. Fournier's gangrene secondary to

perforated retrocaecal appendicitis: a turbulent and prolonged ICU admission -- Septic shock and complications. The use of venous-venous extracorporeal membrane oxygenation in a patient with severe acute respiratory distress syndrome and multiple organ failure due to septic shock -- Viral infections in the ICU -- HIV. Respiratory insufficiency in an HIV patient -- Herpesviridae. Severe varicella zoster virus reactivation after SARS-CoV-2 vaccination in an immunocompetent patient -- Herpesviridae. A young man with acute liver failure and hemolysis -- Influenza. Challenges in Infection Management in the Immunocompromised Patient -- SARS-CoV-2. Organizing pneumonia treated with high dose methylprednisolone in an adolescent with Covid-19 pneumonia under extracorporeal circulation -- Severe infections in the ICU -- Parasitic infections. Severe malaria in the ICU -- Parasitic infections. Dyspnea, oedema, and abdominal distention -- Mucormycosis. An unusual cause of intracranial hemorrhage: cerebral mucormycosis -- Fungal infections. A Case of Gastroparesis and Candidemia secondary to Gastric Ischemia -- Wrap-up -- Part II. The best clinical cases in respiratory medicine -- Principles and management of ARDS -- ARDS secondary to near-drowning. Drowning in seawater -- ARDS treatment in a patient with another condition. The use of inhaled nitric oxide for acute respiratory distress syndrome in a patient with a subarachnoid hemorrhage -- Post-partum ARDS. Postpartum ARDS in a Patient with Suspected Amniotic Fluid Embolism after Complicated Childbirth -- Airway complications. Management of a non-traumatic tracheal lesion in severe tracheobronchomalacia -- Bronchopleural fistula. Post COVID-19 bronchopleural fistula treated with "closed-lung" minimal ventilation and ECCO2R -- Weaning from mechanical ventilation. Antipsychotic-induced respiratory dyskinesia in a patient with severe SARS-CoV2 pneumonia -- Pulmonary embolism in the ICU -- Diagnosis of pulmonary embolism. An Uncommon Cause of Pulmonary Embolism -- Right ventricular failure in pulmonary embolism. The forgotten chamber: When in trouble, go back to basics -- Mechanical circulatory support in pulmonary embolism. VA-ECMO for resuscitation of cardiac arrest after pulmonary embolism in brain stem intracranial hemorrhage -- Wrap up -- Part III. The best clinical cases in cardiovascular medicine -- Principles and management of rhythm disturbances. Overview of cardiac arrest.-Arrhythmias. Electrical storm in a COVID-19 patient -- Antiarrhythmic drugs. A case of near-fatal chronic digoxin toxicity -- Cardiac arrest. Pediatric out-of-hospital cardiac arrest on the soccer pitch – how implementation of digital solutions into the chain of survival can help with a favorable outcome -- Principles and management of heart failure and cardiogenic shock -- Differential diagnosis of shock. A 60- year old woman with gastrointestinal bleeding in hemorrhagic shock- an unexpected shift in shock etiology -- Cardiogenic shock. Seizure-associated takotsubo cardiomyopathy complicated by cardiogenic shock and successfully treated with levosimendan -- Cardiogenic shock. Cardiogenic shock due to reversed Takotsubo syndrome associated with E-cigarette or vaping product use-associated lung injury (EVALI) -- Ivabradine as an alternative to beta-blockade in Takotsubo cardiomyopathy: case report -- Myocarditis. Novel immunotherapy and mechanical cardiac support in myocarditis: A case report -- Peripartum cardiomyopathy. Peripartum cardiomyopathy- Diagnostic and therapeutic challenge -- Perioperative cardiovascular critical care. Impact of perioperative veno-arterial extracorporeal membrane oxygenation on outcome in a patient with impaired cardiac function undergoing open thoracoabdominal penetrating aortic ulcer repair -- Wrap-up -- Part IV. The best clinical

cases in neurocritical care and severe trauma -- Principles and management of subarachnoid hemorrhage -- Respiratory complications of SAH. Systemic complications of subarachnoid hemorrhage -- Cardiovascular complications of SAH. Neurogenic stunned myocardium in subarachnoid hemorrhage -- Principles and management of severe trauma and bleeding -- Traumatic brain injury and rhabdomyolysis. Continuous renal replacement therapy management in a patient with severe traumatic brain injury and rhabdomyolysis-associated acute kidney injury -- Post-traumatic cardiac tamponade. Delayed post-traumatic tamponade: the end of the tunnel -- Pelvic trauma. Polytrauma patient with refractory shock -- Abdominal and pelvic bleeding control strategies. Resuscitative endovascular balloon occlusion of the aorta (REBOA) in a patient with exsanguinating penetrating torso trauma. A clinical case -- Principles and management of hemorrhagic shock -- Hemothorax. Massive Hemothorax Of Extremely Rare Cause -- Spleen rupture. An Unusual Cause of Syncope -- Transfusion complications. Blood transfusion triggered posterior reversible encephalopathy syndrome -- Wrap-up -- Part V. The best clinical cases in severe endocrine and metabolic disorders -- Endocrine and metabolic disorders in the ICU -- Diabetes ketoacidosis. New onset diabetes with diabetic ketoacidosis after SARS-CoV-2 infection in adult critically ill patient -- Porphyria. Acute Intermittent Porphyria: A challenging diagnosis and treatment -- Cyanide poisoning. Arterialization of venous blood -- Wrap-up -- Part VI. The best clinical cases in severe inflammatory disorders -- Inflammatory disorders in the ICU -- Systemic capillary leak syndrome. In case of severe hemoconcentration and hypovolemic shock, also think of zebras: a case of systemic capillary leak syndrome -- Haemophagocytic lymphohistiocytosis. Haemophagocytic lymphohistiocytosis in a critically ill adult with asymptomatic post-acute COVID-19 -- Miastenia gravis. The approach to a patient with a myasthenic crisis in an intensive care unit -- Adult-onset Still's disease. A usual presentation of an unusual case -- Wrap-up.

Sommario/riassunto

The aim of this book, part of the European Society of Intensive Care Medicine (ESICM) textbook series and designed by the NEXT Committee of the European Society of Intensive Care Medicine, is to provide the readers with a unique review of the main syndromes in Intensive Care Medicine by means of a collection of clinical cases. The book is structured in six sections (severe infections and sepsis, respiratory medicine, cardiovascular medicine, neurocritical care and severe trauma, severe endocrine and metabolic disorders, and severe inflammatory disorders), that allow the reader to focus on a specific area. Each section begins with an "introductory chapter" to maintain cohesion. Within each section, every chapter corresponds to a clinical case covering different aspects of a relevant disease. All the chapters have a uniform design: introduction/background, case presentation, investigations, differential diagnosis, treatment, evolution, outcome and follow-up, and discussion. The target audience of this work includes university students, fellows of intensive care medicine, critical care and emergency medicine residents, and experienced physicians aiming to review the most relevant syndromes of the specialty. .
