1. Record Nr. UNINA9910790323003321

Titolo	Dynamics of the structures and non destructive testing [[electronic resource]] : special topic volume with invited peer reviewed papers only / / edited by Moussa Karama
Pubbl/distr/stampa	Durnten-Zurich, Switzerland, : Trans Tech Publications Ltd, c2011
ISBN	1-62870-824-7 3-03813-502-X
Descrizione fisica	1 online resource (105 p.)
Collana	Key engineering materials, , 1013-9826 ; ; v. 482
Altri autori (Persone)	KaramaMoussa
Disciplina	620.1/127
Soggetti	Materials Materials - Technological innovations Materials - Research Nondestructive testing
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 keyword and author indexes.
Nota di contenuto	Dynamics of the Structures and Non Destructive Testing; Preface; Table of Contents; An Analytical Method for Free Vibration Analysis of Composite Beams Subjected to Initial Thermal Stresses; Polynomial Approach Modeling of Resonator Piezoelectric Disc; Study of the Transmission of Ultrasonic Guided Wave at the Junction of Two Different Elastic Plates with the Presence of a Defect; Identification of the Dynamic Coefficients of Hybrid Bearings; Impact Resistance of Composite Materials under Biaxial Preloading; Characterization of Grains Size by Ultrasounds Identification of Materials Properties Using Displacement Field MeasurementPhysical and Mechanical Properties of the Reinforced Polyester: Characterization - Probabilistic Analysis; Seismic Vulnerability Assessment Using the Instrumentation of an Existing Building; High Temperature Tribological Behaviour of Metal Matrix Composites Produced by SPS; Keywords Index; Authors Index
Sommario/riassunto	With energy costs increasing, the gains to be made from weight-saving are most significant in the aerospace domain, but such gains are clearly also advantageous for road transport and this is even beginning to be

	recognised in shipbuilding. Consequently, improved reliability and resistance to degradation and durability in severe environments are always important requirements. Thus the development of composites, nano-composites and refractory alloys having specific properties has become a key factor in industrial and technological progress. Another challenge is the recyclability of advanced mat

2. Record Nr. UNINA9910956349403321

Autore	Giunti Carlo
Titolo	Fundamentals of neutrino physics and astrophysics / / Carlo Giunti, Chung W. Kim
Pubbl/distr/stampa	Oxford ; ; New York, : Oxford University Press, 2007
ISBN	9786611160050 9780191523229 0191523224 9781281160058 1281160059 9781429488433 1429488433 9780191708862 0191708860
Edizione	[1st ed.]
Descrizione fisica	xvi, 710 p. : ill
Altri autori (Persone)	KimChung Wook <1934->
Disciplina	539.7215
Soggetti	Neutrino astrophysics Neutrinos
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references (p. [671]-704) and index.
Nota di contenuto	Intro -- Contents -- 1 Historical introduction -- 2 Quantized Dirac fields -- 2.1 Dirac equation -- 2.2 Representations of &amp -- #947 -- matrices -- 2.3 Products of &amp -- #947 -- matrices -- 2.4 Relativistic covariance -- 2.5 Helicity -- 2.6 Gauge transformations -- 2.7 Chirality -- 2.8 Solution of the Dirac equation -- 2.9 Quantization -- 2.10 Symmetry transformation of states -- 2.11 C, P, and T

transformations -- 2.12 Wave packets -- 2.13 Finite normalization volume -- 2.14 Fierz transformations -- 3 The Standard Model -- 3.1 Electroweak Lagrangian -- 3.2 Electroweak interactions -- 3.3 Three generations -- 3.4 The Higgs mechanism -- 3.5 Fermion masses and mixing -- 3.6 Gauge bosons -- 3.7 Effective low-energy CC and NC Lagrangians -- 4 Three-generation mixing -- 4.1 Diagonalization of the mass matrix -- 4.2 Physical parameters in the mixing matrix -- 4.3 Parameterization of the mixing matrix -- 4.4 Degenerate masses -- 4.5 Mixing matrix with one vanishing element -- 4.6 CP violation -- 4.7 Rephasing invariants -- 4.8 Unitarity triangles -- 4.9 Conditions for CP violation -- 5 Neutrino interactions -- 5.1 Neutrino-electron interactions -- 5.2 Hadron decays -- 5.3 Neutrino-nucleon scattering -- 6 Massive neutrinos -- 6.1 Dirac masses -- 6.2 Majorana neutrinos -- 6.3 Mixing of three Majorana neutrinos -- 6.4 One-generation Dirac-Majorana mass term -- 6.5 Three-generation Dirac-Majorana mixing -- 6.6 Special cases -- 6.7 Majorana mass matrix -- 7 Neutrino oscillations in vacuum -- 7.1 Standard Derivation of the Neutrino Oscillation Probability -- 7.2 Antineutrino case -- 7.3 CPT, CP, and T transformations -- 7.4 Two-neutrino mixing -- 7.5 Types of neutrino oscillation experiments -- 7.6 Averaged transition probability -- 7.7 Large &amp -- #916 -- m[sup(2)] dominance -- 7.8 Active small &amp -- #916 -- m[sup(2)].
8 Theory of neutrino oscillations in vacuum -- 8.1 Plane-wave approximation -- 8.2 Wave-packet treatment -- 8.3 Size of neutrino wave packets -- 8.4 Questions -- 9 Neutrino oscillations in matter -- 9.1 Effective potentials in matter -- 9.2 Evolution of neutrino flavors -- 9.3 The MSW effect -- 9.4 Slab approximation -- 9.5 Parametric resonance -- 9.6 Geometrical representation -- 10 Solar neutrinos -- 10.1 Thermonuclear energy production -- 10.2 Standard solar models -- 10.3 Model-independent constraints on solar neutrino fluxes -- 10.4 Homestake experiment -- 10.5 Gallium experiments -- 10.6 Water Cherenkov detectors -- 10.7 Vacuum oscillations -- 10.8 Resonant flavor transitions in the Sun -- 10.9 Regeneration of solar [sub(e)]'s in the Earth -- 10.10 Global fit of solar neutrino data -- 11 Atmospheric neutrinos -- 11.1 Flux of atmospheric neutrinos -- 11.2 Atmospheric neutrino experiments -- 12 Terrestrial neutrino oscillation experiments -- 12.1 Sensitivity -- 12.2 Reactor experiments -- 12.3 Accelerator experiments -- 13 Phenomenology of three-neutrino mixing -- 13.1 Neutrino oscillations in vacuum -- 13.2 Matter effects -- 13.3 Analysis of oscillation data -- 14 Direct measurements of neutrino mass -- 14.1 Beta decay -- 14.2 Pion and tau decays -- 14.3 Neutrinoless double-beta decay -- 15 Supernova neutrinos -- 15.1 Supernova types -- 15.2 Supernova rates -- 15.3 Core-collapse supernova dynamics -- 15.4 SN1987A -- 15.5 Neutrino mass -- 15.6 Neutrino mixing -- 15.7 Other neutrino properties -- 15.8 Future -- 16 Cosmology -- 16.1 Basic general relativity -- 16.2 Robertson-Walker metric -- 16.3 Dynamics of expansion -- 16.4 Matter-dominated Universe -- 16.5 Radiation-dominated Universe -- 16.6 Curvature-dominated Universe -- 16.7 Vacuum-dominated Universe -- 16.8 Thermodynamics of the early Universe -- 16.9 Entropy -- 16.10 Decoupling.
16.11 Cosmic microwave background radiation -- 17 Relic neutrinos -- 17.1 Neutrino decoupling -- 17.2 Electron-positron annihilation -- 17.3 Neutrino temperature -- 17.4 Energy density of light massive neutrinos -- 17.5 Energy density of heavy neutrinos -- 17.6 Big-Bang nucleosynthesis -- 17.7 Large-scale structure formation -- 17.8 Global fits of cosmological data -- 17.9 Number of neutrinos -- 17.10 Neutrino asymmetry -- Appendices -- A: Conventions, useful formulas,

and physical constants -- A.1 Conventions -- A.2 Pauli matrices -- A.3 Dirac matrices -- A.4 Mathematical formulas -- A.5 Physical constants -- B: Specialrelativity -- B.1 The Lorentz group -- B.2 Representations of the Lorentz group -- B.3 The Poincaré group and its representations -- C: Lagrangian theory -- C.1 Variational principle and field equations -- C.2 Canonical quantization -- C.3 Noether's theorem -- C.4 Space-time translations -- C.5 Lorentz transformations -- C.6 Complex fields -- C.7 Global gauge symmetry -- D: Gauge theories -- D.1 General formulation of gauge theories -- D.2 Quantum chromodynamics -- E: Feynman rules of the standard electroweak model -- E.1 External lines -- E.2 Internal lines -- E.3 Vertices -- E.4 Cross-sections and decay rates -- 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 -- Y -- Z.

Sommario/riassunto

Our Universe is made of a dozen fundamental building blocks. Among these, neutrinos are the most mysterious - but they are the second most abundant particles in the Universe. This book provides detailed discussions of how to describe neutrinos, their basic properties, and the roles they play in nature.