

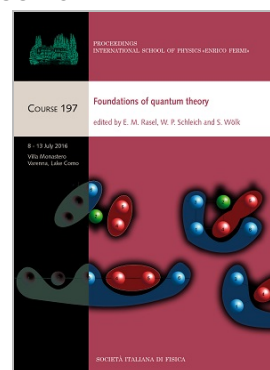
Editoria - febbraio 2019

📅 28-02-2019 ↗ <http://www.primapagina.sif.it/article/899>

Proceedings of the International School of Physics "Enrico Fermi" - Course 197 Foundations of Quantum Theory

E.M. Raseł, W.P. Schleich, S. Wölk

This volume provides a summary of the lectures presented at the International School of Physics "Enrico Fermi" on the Foundations of Quantum Theory, organized by the Italian Physical Society in Varenna, Italy, 8-13 July 2016, in collaboration with the Wilhelm und Else Heraeus-Stiftung. It was the first "Enrico Fermi" Summer School on this topic since 1977. Its main goal was to provide an overview of the recent theoretical and experimental developments in an active field of research, the foundations of quantum mechanics. The field is characterized by a dichotomy of unparalleled agreement between theory and experiment on the one hand, and an enormous variety of interpretations of the underlying mathematical formalism on the other hand. These proceedings contain 21 contributions on a range of topics: the history and interpretations of quantum theory; the principle of complementarity and wave-particle duality; quantum theory from first principles; the reality of the wave function; the concept of the photon; measurement in quantum theory; the interface of quantum theory and general relativity; and quantum optical tests of quantum theory.



Il Nuovo Cimento Vol. 41 N. 4 (2018)

Les Rencontres de Physique de la Vallée d'Aoste – La Thuile 2018

Edited by *M. Greco*

The 2018 Rencontres de Physique de la Vallée d'Aoste were held at the Planibel Hotel of La Thuile, Aosta Valley, on February 25 - March 3, with the XXXII edition of "Results and Perspectives in Particle Physics". The physics programme included various topics in particle physics, also in connection with present and future experimental facilities, as cosmology and astrophysics, dark matter and neutrino physics, heavy flavours, CP violation and rare decays, electroweak and hadron physics with e^+e^- and hadron colliders, Higgs physics, searches for new physics and prospects at future facilities.



Quaderni di Storia della Fisica N. 21 (2019)

È online free to read per 30 giorni e di prossima distribuzione il fascicolo 21 dei **Quaderni di Storia della Fisica**, supplemento del Giornale di Fisica, su alcuni degli illustri protagonisti della storia della fisica dal XVIII al XX secolo. Il fascicolo si apre con l'articolo **The genius of Ettore Majorana** di A. Zichichi, in cui l'opera del grande fisico catanese viene inserita in una prospettiva storica di riconoscimento della sua genialità da parte di eminenti fisici del XX secolo, primo fra tutti Enrico Fermi.

Nel successivo articolo **I fisici italiani in guerra: 1915-1918**, E. Colombi, F. Guerra, M. Leone e N. Robotti presentano un approfondimento storico nel quale si delineano il ruolo e il coinvolgimento rilevante dei fisici nelle vicende legate alla Grande Guerra.

Segue l'articolo **Photonics in Italy: the decade 1970-1980** di V. Degiorgio, nel quale l'autore descrive la crescita e lo sviluppo della ricerca italiana in tutti i campi della fotonica, dagli aspetti fondamentali a quelli applicativi.

L'articolo **The strange case of Dr. Petit and Mr. Dulong** di R. Piazza costituisce un tentativo di ristabilire una visione più equilibrata del lavoro dei due scienziati i cui risultati nel campo della termodinamica non sempre hanno goduto del riconoscimento che, nel quadro dello sviluppo della scienza moderna, essi meritavano.

Mikhail Lomonosov (1711-1765), scientist in politically turbulent times, a firma di R. Crease e V. Shiltsev, illustra la vita e le opere di uno dei più famosi scienziati russi, definito "il padre della scienza russa", personaggio sfaccettato e autore di innumerevoli scoperte non solo in ambito scientifico ma in svariati campi del sapere.

Segue l'articolo **La pressione della luce: un resoconto storico** di B. Carazza, nel quale l'ipotesi della pressione della luce viene considerata dagli albori fino agli esperimenti conclusivi di Lebedev nel XX secolo.

E per finire, un'analisi storica sulla figura di Angelo Secchi, pioniere della spettroscopia astronomica del XIX secolo e come tale considerato fondatore dell'astrofisica moderna, è presentata nell'articolo **In ricordo di Padre Angelo Secchi, gesuita e astronomo reggiano** di E. Rota.



EPJ E – Highlights

Association equilibria of divalent ions on the surface of liposomes formed from phosphatidylcholines

I. Dobrzyńska

Ions with two positive electrical charges, such as calcium ions, play a key role in biological cell membranes. The adsorption of ions in solution onto the membrane surface is so significant that it affects the structural and functional properties of the biological cells. Specifically, ions interact with surface molecules such as a double layer of lipids, or liposomes, formed from phosphatidylcholines (PC). In a new study published in EPJ E, Izabela Dobrzyńska from the University of Białystok, Poland, develops a mathematical model describing the electrical properties of biological membranes when ions such as calcium, barium and strontium adsorb onto them at different pH levels. Her work helps shed light on how ion adsorption reduces the effective surface concentration of add-on molecules with a specific function that can take part in biochemical reactions. These factors need to be taken into account when studying the diverse phenomena that occur at the lipid membrane in living cells, such as ion transport mechanisms.

Read more



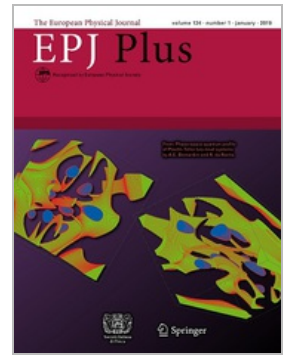
EPJ Plus – Highlights

Ubiquitous exposure to microfiber pollution in the air

A. Tunahan Kaya, M. Yurtsever, S. Çiftçi

Microplastics (MPs) are one of the major hot topics in environmental science. Scientists have started to investigate the impact of such pollutants in different habitats, such as oceans, rivers, soils and air. Several studies have shown that MP fibers are very common in the atmosphere. They are invisible to human eye as they are smaller than 5 μm . These fibers, which derive from different sources, float freely in the air pushed by winds. A recent study, published on EPJ Plus, evaluated microfiber pollution in the air of an intercity terminal and a university campus in the Sakarya Province, Turkey. MPs were present in widely varying rates and sizes in the air. The authors suggest a link between an increase of MP pollutants in the environment to recent substantial developments in the synthetic fibers industry, which makes heavy use of cheap non-woven fabrics. This issue raises questions about consumerism and sustainability in the clothes industry.

Read more



EPL – Highlights from the previous volumes

Wetting routes of droplet upon patterned hydrophilic surface

by *T. Li et al.*

Majorana chiral modes in a superconducting hybrid structure

by *C.-K. Chiu et al.*

Conjugate coupling-induced spontaneous symmetry breaking

by *K. Ponrasu et al.*

Purcell-Dicke enhancement of the Casimir-Polder potential

by *S. Fuchs, Y. Buhmann*

EPL Highlights are published in the first issue of each volume, *i.e.* four times a year, as well as in Europhysics News (EPN).

