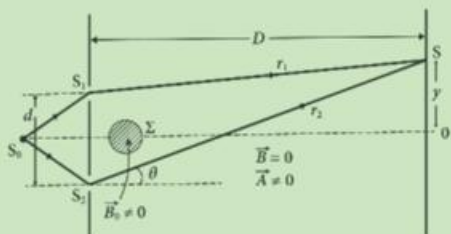


ΕΜΜΑΝΟΥΗΛ ΔΡΗΣ

Ηλεκτρομαγνητισμός, κβαντομηχανική και μετασχηματισμοί βαθμίδας



METADATA

Title: Electromagnetism, quantum mechanics and gauge transformations

Other Titles: -

Language: Greek

Authors: Dris, E., Professor Emeritus, NTUA

ISBN: 978-618-228-294-6

Subject: NATURAL SCIENCES AND AGRICULTURAL SCIENCES

Keywords: Field / Potential / Lorentz / Gauge / Lagrange

Bibliographic Reference: Dris, E. (2024). Electromagnetism, quantum mechanics and gauge transformations [Monograph]. Kallipos, Open Academic Editions. <http://dx.doi.org/10.57713/kallipos-1045>

Abstract

This book consists of seven chapters. Introduction to Electromagnetism and Quantum Mechanics are included and then Gauge Transformations are examined. The Gauge Transformations have been a research tool in the sense that the request that the Schroedinger is invariant under those transformations leads to the introduction of interactions, e.g. electromagnetic. Chapter 1 is an introduction to electromagnetic fields and

potentials. Chapter 2 is referred to Lagrange and Hamilton equations for charged particles inside an external electromagnetic field. Chapter 3 is referred to operators in quantum mechanics. Chapter 4 introduces the average values of the quantum quantities. Chapter 5 studies the time evolution of the average values. Chapter 6 describes the Ehrenfest theorem. Finally, chapter 7 is referred to the Aharonov-Bohm effect.

