

ΘΕΩΡΙΑ ΤΗΣ ΕΙΔΙΚΗΣ ΣΧΕΤΙΚΟΤΗΤΟΣ

Θ. Χριστοδουλάκης

Ε. Κορφιάτης



ΕΘΝΙΚΟ ΚΑΙ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ΤΜΗΜΑ ΦΥΣΙΚΗΣ
ΑΘΗΝΑ 2015



HEALLINK
Ελληνική Ακαδημαϊκή και Ανοικτή Ακαδημαϊκή Έκδοση



METADATA

Title: Theory of Special Relativity

Other Titles: Lectures-Exercises

Language: Greek

ISBN: 978-960-603-071-0

Subject: NATURAL SCIENCES AND AGRICULTURAL SCIENCES

Keywords: Special Relativity / Lorentz Transformations

Bibliographic Reference: Christodoulakis, T., & Korfiatis, E. (2015). Theory of Special Relativity [Undergraduate textbook]. Kallipos, Open Academic Editions. <http://dx.doi.org/10.57713/kallipos-513>

Abstract

This book concerns the lectures on the subject that I annually delivered for the 4th-semester students of the Physics department of the NKUA (1990-2019). It contains elements from Matrix Theory, their use in representing Galileo and Lorentz groups, and the analysis of their subgroups. Curve-line in parametric form and its re-parameterization.

Dirac's functional, density distribution. Galileo and Lorentz transformations, Boosts, Relativistic Objects, Tensor Calculus, Four-velocity/acceleration, Relativistic Dynamics. Maxwell's Electromagnetic theory, Electromagnetic energy-momentum tensor, covariant form of the equations. Applications to Relativistic phenomena. Solved exercises.

