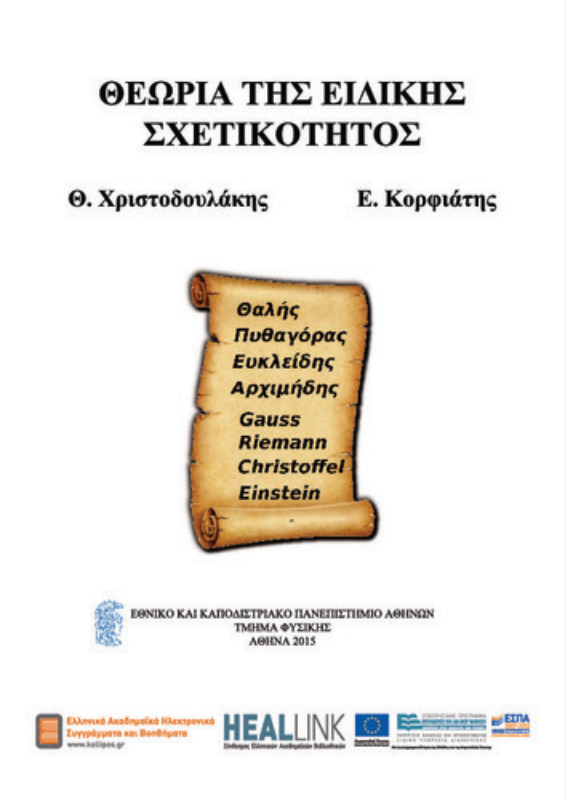

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Abstract

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.

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