

Book Review

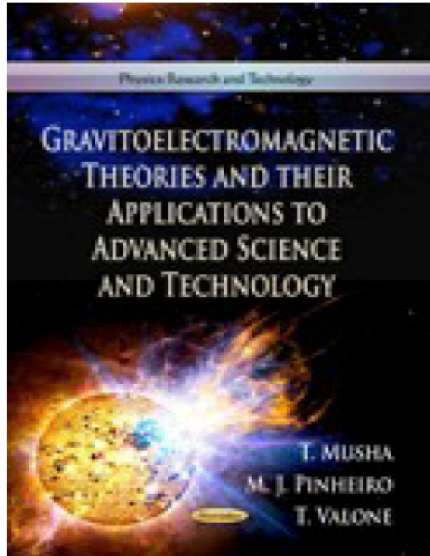


Photo of the book cover

Gravitoelectromagnetic theories and their applications to advanced science and technology

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Gravitoelectromagnetism refers to a set of formal analogies between the equations for electromagnetism and relativistic gravitation; specifically between Maxwell's field equations and an approximation, valid under certain conditions, to the Einstein field equations for general relativity. Gravitomagnetism is a widely used term referring specifically to the kinetic effects of gravity, in analogy to the magnetic effects of moving electric charge. The analogy and equations differing only by some small factors were first published in 1893 by Oliver Heaviside as a separate theory expanding Newton's law. T.T.Brown, who firstly discovered the electrogravitic effect, performed several experiments during 1950s and succeeded to generate thrust without the reliance on a surrounding medium by applying high voltages to materials with high dielectric constants. In Tomas Valone's book, "Electrogravitic Systems", published in 1994, P.A. LaViolette claimed that electrogravitic technology was developed under U.S. Air Force black project since late 1954, and has alledged that is has been put to practical use in the B-2 Advanced Technology

Bomber to provide an exotic auxiliary mode of propulsion.

This book outlines the physical basis of gravitoelectromagnetic theories and related physics which might lead to the development of advanced technologies for future aviation systems and other purposes. The intent of the present volume is to assist the reader in the comprehension of the mathematical basis of gravitoelectromagnetism and its application..

Chapter 1 introduces the historical background of electrogravitics, especially the Biefeld-Brown effect. The second chapter provides explanations of the Biefeld-Brown effect and other related phenomena. The third chapter is concerned with the electrogravitic effect as related to zero point energy fluctuation in the vacuum from the standpoint of quantum electrodynamics. The fourth chapter is concerned with other electromagnetic gravity control devices including Heim's theory and the Li-Torr electrogravitic theory. The fifth chapter is an exposition that the Abraham force is the analogue of the Magnus

force, and it thus represents the formation of a vortex structure with an electromagnetic nature in the physical vacuum: it is therefore analogous to an electromagnet toroid that can generate gravitational field. The sixth chapter deals with a plasma theory of the Universe and the role played by the gravito-electromagnetic forces generated by the plasma permeating the space between planets. And the last chapter shows the application on advanced aviation systems and future prospect of these technologies. This is a textbook written for both students and professional scientists, providing the mathematical basis for readers to introduce the basic concept of gravito-electromagnetic theories, and also providing elementary applications.

Review by

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