

REVIEWS OF MODERN PHYSICS

VOLUME 27

NUMBER 2

APRIL, 1955

Published for the
AMERICAN PHYSICAL SOCIETY

by the
AMERICAN INSTITUTE OF PHYSICS
WASHINGTON, D. C. and NEW YORK, N. Y.

REVIEWS OF MODERN PHYSICS

VOLUME 27, NUMBER 2

April, 1955

New Analysis of the Interferometer Observations of Dayton C. Miller

R. S. BARNARD, R. W. MCGONNELL, F. C. LEWIS, and G. KATZ
Case Institute of Technology, Cleveland, Ohio

For nearly thirty years the results of the Michelson-Morley experiment obtained by Dayton C. Miller on Mount Wilson have played an important role in all other fields of the sciences. As known to Miller's scientific community in the present time, however, the original observations are completely in the present status. It has seemed surprising that the observations be subjected to a new analysis. It is now shown that the small periodic fringe displacements found by Miller are due to the periodic fluctuations in the position of the fringe patterns in a very difficult experiment. The remaining systematic effects are studied without making any correction. There was much more systematic on Mount Wilson than there was assumed to be, especially in the present analysis. Including Miller himself in his work done at Case in Cleveland, he completed in the present study, Miller's previous Mount Wilson data made no effect on the final position of the ether theory and, within the limitations imposed by local disturbances, are entirely consistent with a null result at all speeds during a year.

INTRODUCTION

THE null result obtained in the Michelson-Morley experiment at Cleveland in 1887 was the culmination of the long nineteenth-century search for an ether and proved to be a major impetus for the theoretical developments made by Lorentz, Poincaré, Einstein, Planck, and especially Einstein. The crucial significance of the Michelson-Morley result stimulated many experiments of this experiment during the next fifty years, especially in the investigation of the theory of relativity. Although all trials of this experiment except the one carried out at Mount Wilson by Dayton C. Miller failed to yield results within the accuracy of the observation, Miller's observed fringe displacements also were very small, being on the average only about 1/10 of those predicted by the ether theory for the 30 km/sec velocity of the earth in its orbit. However, as these small effects have received no adequate explanation, and their interest in them has continued, it has seemed desirable to make a rather detailed analysis of the observations recorded.¹

Michelson and Morley had originally planned to repeat their experiment at intervals of about three months throughout a year and then to allow for any possibility

that the earth's orbital velocity at one epoch might fortuitously coincide with the motion of the entire solar system through space and give a small residual velocity in their apparatus. However, after completing the July, 1887 observations, they did not return to this problem, and the completion of the author's first experiment for all epochs was finally carried out by Miller during the years from 1910 through 1926 in Cleveland and at Mount Wilson. Miller's Mount Wilson experiment² was conducted at intervals from April, 1910, through February, 1926, being interrupted with and followed by numerous trials at Cleveland.

In February, 1911, the interferometer was set up at Mount Wilson, and Miller made numerous observations during the period April 6-26, 1911. These data indicated a possible small periodic effect, with an average residual systematic magnitude of about 0.04 fringe, but Miller suspected that temperature effects or expansion of the instrument were the cause of the observations as it occurred in the earth's magnetic field might be the cause. Accordingly he had designed a vacuum box for the interferometer, which was sent to Mount Wilson in October of 1911. Unfortunately the greatest incentive to continue the experiments came from Professor Albert Einstein who visited Miller at Case on May 25, 1913, and urged that

¹ R. S. Barnard and R. W. McGonnell, *Rev. Mod. Phys.*, **27**, 245 (1955).
² The author completely agrees with the early experiments done only in the present study, the present analysis of the data is published in the *Rev. Mod. Phys.*, **27**, 245 (1955).

³ F. C. Lewis, *Sci. News*, **26**, 262 (1913); *Sci. News*, **27**, 262 (1914); *Sci. News*, **28**, 262 (1915); *Sci. News*, **29**, 262 (1916); *Sci. News*, **30**, 262 (1917).

Modern Physics 1955

Huangqi Zhang



Modern Physics 1955:

The Last Man Who Knew Everything David N. Schwartz, 2017-12-05 The definitive biography of the brilliant charismatic and very human physicist and innovator Enrico Fermi In 1942 a team at the University of Chicago achieved what no one had before a nuclear chain reaction At the forefront of this breakthrough stood Enrico Fermi Straddling the ages of classical physics and quantum mechanics equally at ease with theory and experiment Fermi truly was the last man who knew everything at least about physics But he was also a complex figure who was a part of both the Italian Fascist Party and the Manhattan Project and a less than ideal father and husband who nevertheless remained one of history's greatest mentors Based on new archival material and exclusive interviews *The Last Man Who Knew Everything* lays bare the enigmatic life of a colossus of twentieth century physics

Catalog of Books and Reports in the Bureau of Mines Technical Library, Pittsburgh, Pa United States. Bureau of Mines. Technical Library, Pittsburgh, 1968

Enrico Fermi Giuseppe Bruzzaniti, 2016-03-21 This biography explores the life and career of the Italian physicist Enrico Fermi which is also the story of thirty years that transformed physics and forever changed our understanding of matter and the universe nuclear physics and elementary particle physics were born nuclear fission was discovered the Manhattan Project was developed the atomic bombs were dropped and the era of big science began It would be impossible to capture the full essence of this revolutionary period without first understanding Fermi without whom it would not have been possible Enrico Fermi The Obedient Genius attempts to shed light on all aspects of Fermi's life his work motivation influences achievements and personal thoughts beginning with the publication of his first paper in 1921 through his death in 1954 During this time Fermi demonstrated that he was indeed following in the footsteps of Galileo excelling in his work both theoretically and experimentally by deepening our understanding of the Pauli exclusion principle winning the Nobel Prize for his discovery of the fundamental properties of slow neutrons developing the theory of beta decay building the first nuclear reactor and playing a central role in the development of the atomic bomb Interwoven with this fascinating story the book details the major developments in physics and provides the necessary background material to fully appreciate the dramatic changes that were taking place Also included are appendices that provide a timeline of Fermi's life several primary source documents from the period and an extensive bibliography This book will enlighten anyone interested in Fermi's work or the scientific events that led to the physics revolution of the first half of the twentieth century

Electrons, Neutrons and Protons in Engineering J. R. Eaton, 2013-10-22 *Electrons Neutrons and Protons in Engineering* focuses on the engineering significance of electrons neutrons and protons The emphasis is on engineering materials and processes whose characteristics may be explained by considering the behavior of small particles when grouped into systems such as nuclei atoms gases and crystals This volume is comprised of 25 chapters and begins with an overview of the relation between science and engineering followed by a discussion on the microscopic and macroscopic domains of matter The next chapter presents the basic relations involving

mechanics electricity and magnetism light heat and related subjects which are most significant in the study of modern physical science Subsequent chapters explore the nucleus and structure of an atom the concept of binding forces and binding energy the configuration of the system of the electrons surrounding the atomic nucleus physical and chemical properties of atoms and the structure of gases and solids The energy levels of groups of particles are also considered along with the Schrödinger equation and electrical conduction through gases and solids The remaining chapters are devoted to nuclear fission nuclear reactors and radiation This book will appeal to physicists engineers and mathematicians as well as students and researchers in those fields

Catalogue of Title-entries of Books and Other Articles Entered in the Office of the Librarian of Congress, at Washington, Under the Copyright Law ... Wherein the Copyright Has Been Completed by the Deposit of Two Copies in the Office Library of Congress. Copyright Office, 1929 **Publications of Goddard Space Flight Center** Goddard Space Flight Center, **Catalog of Copyright Entries** Library of Congress. Copyright Office, 1956

Mary B. Hesse (1924-2016): Metaphors, Models, and the Growth of Scientific Knowledge Pietro Gori, 2025-08-20 This volume explores the work of Mary B Hesse 1924-2016 a pivotal figure in twentieth century philosophy of science At a time when the foundations of an integrated approach to the history and philosophy of science were being established Hesse as a female philosopher offered a distinctive and influential contribution grounded in a post empiricist understanding of the natural sciences Central to her thought was a focus on the metaphorical and analogical value of scientific language in contrast to views assessing its literal significance Hesse also departed from traditional hypothetico deductive accounts of scientific methodology and theory structure advancing instead perspectives rooted in both historical and contemporary scientific practices To mark the centenary of her birth this book brings together an international group of scholars to re-examine and engage with Hesse's intellectual legacy The chapters address the central themes of her work and situate them within her broader philosophical context Each contribution adopts a cross disciplinary perspective highlighting the continued relevance of Hesse's ideas to current debates in the philosophy of science This volume will be of particular interest to scholars in the history and philosophy of science as well as those engaged in gender studies and the study of women in philosophy Theory, Evidence, Data: Themes from George E. Smith Marius Stan, Christopher Smeenk, 2023-11-27 This book builds on the path breaking work of George E Smith and further explores the notions of evidence and confirmation in the exact sciences from two perspectives conceptual and historical Contributions in this volume investigate the philosophical presuppositions explanatory scope and historical precursors of evidence in mathematical physics and related disciplines The papers are written by and of interest to philosophers and historians of science *Klein-Nishina Photon Cross Sections (Program Gamma)* M. J. Stanley, 1959 **Niels Bohr** Paul McEvoy, 2001 This is a detailed study of Niels Bohr's work on an epistemological foundation for 20th century physics The connections he drew between physics language and philosophy are traced historically and their validity is analyzed in the light of contemporary science Philosophy From Atomos to Atom

Andrew G. Van Melsen, 2004-01-01 This classic profiles the atom's progress from Grecian philosophy to physical conception in the 17th century and modern applications to quantum theory Fascinating Philosophy 1960 edition *Journal of the Franklin Institute* Franklin Institute (Philadelphia, Pa.), 1956 Vols 1-69 include more or less complete patent reports of the U S Patent Office for years 1825-1859 cf Index to v 1-120 of the Journal p 415 **Air Force Scientific Research**

Bibliography: 1950-56 Library of Congress. Science and Technology Division, 1961 Concepts of Classical Optics John Strong, 2012-04-26 An intermediate course in optics this volume explores both experimental and theoretical concepts offering a practical knowledge of geometrical optics with a minimum of mathematical detail 1958 edition *Register of the University of California* University of California (1868-1952), 1954 **Symposium on Radiation Effects on Materials - Volume 1**, 1958 The Magnetic Properties and Structure of Matter I. A. Kov Grigor'evich Dorfman, 1962 **NASA Technical Report**, 1969 **Determination of Meteoroid Environments from Photographic Meteor Data** Charles C. Dalton, 1969 A mathematical model is used to represent 8-pik's 1958 physical theory of meteors in a form convenient for programming the computation of meteoroid photometric mass values Sub samples of 333 photographic meteors from McCrosky and Posen's sample are selected with respect to magnitude scaled for minimum velocity A statistical comparison between the 1958 8-pik result and the 1933 8-pik provisional result the Harvard Meteor project basis for mass values relative flux in absolute units for mass momentum and energy are given separately for the terrestrial influx and for the lunar and interplanetary vehicle onfluxes

Embark on a transformative journey with is captivating work, Grab Your Copy of **Modern Physics 1955** . This enlightening ebook, available for download in a convenient PDF format PDF Size: , invites you to explore a world of boundless knowledge. Unleash your intellectual curiosity and discover the power of words as you dive into this riveting creation. Download now and elevate your reading experience to new heights .

https://pinsupreme.com/data/book-search/default.aspx/rollercoaster_science_rigby_literacy.pdf

Table of Contents Modern Physics 1955

1. Understanding the eBook Modern Physics 1955
 - The Rise of Digital Reading Modern Physics 1955
 - Advantages of eBooks Over Traditional Books
2. Identifying Modern Physics 1955
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Modern Physics 1955
 - User-Friendly Interface
4. Exploring eBook Recommendations from Modern Physics 1955
 - Personalized Recommendations
 - Modern Physics 1955 User Reviews and Ratings
 - Modern Physics 1955 and Bestseller Lists
5. Accessing Modern Physics 1955 Free and Paid eBooks
 - Modern Physics 1955 Public Domain eBooks
 - Modern Physics 1955 eBook Subscription Services
 - Modern Physics 1955 Budget-Friendly Options

6. Navigating Modern Physics 1955 eBook Formats
 - ePub, PDF, MOBI, and More
 - Modern Physics 1955 Compatibility with Devices
 - Modern Physics 1955 Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Modern Physics 1955
 - Highlighting and Note-Taking Modern Physics 1955
 - Interactive Elements Modern Physics 1955
8. Staying Engaged with Modern Physics 1955
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Modern Physics 1955
9. Balancing eBooks and Physical Books Modern Physics 1955
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Modern Physics 1955
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Modern Physics 1955
 - Setting Reading Goals Modern Physics 1955
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Modern Physics 1955
 - Fact-Checking eBook Content of Modern Physics 1955
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
 - Integration of Multimedia Elements

- Interactive and Gamified eBooks

Modern Physics 1955 Introduction

Modern Physics 1955 Offers over 60,000 free eBooks, including many classics that are in the public domain. Open Library: Provides access to over 1 million free eBooks, including classic literature and contemporary works. Modern Physics 1955 Offers a vast collection of books, some of which are available for free as PDF downloads, particularly older books in the public domain. Modern Physics 1955 : This website hosts a vast collection of scientific articles, books, and textbooks. While it operates in a legal gray area due to copyright issues, its a popular resource for finding various publications. Internet Archive for Modern Physics 1955 : Has an extensive collection of digital content, including books, articles, videos, and more. It has a massive library of free downloadable books. Free-eBooks Modern Physics 1955 Offers a diverse range of free eBooks across various genres. Modern Physics 1955 Focuses mainly on educational books, textbooks, and business books. It offers free PDF downloads for educational purposes. Modern Physics 1955 Provides a large selection of free eBooks in different genres, which are available for download in various formats, including PDF. Finding specific Modern Physics 1955, especially related to Modern Physics 1955, might be challenging as theyre often artistic creations rather than practical blueprints. However, you can explore the following steps to search for or create your own Online Searches: Look for websites, forums, or blogs dedicated to Modern Physics 1955, Sometimes enthusiasts share their designs or concepts in PDF format. Books and Magazines Some Modern Physics 1955 books or magazines might include. Look for these in online stores or libraries. Remember that while Modern Physics 1955, sharing copyrighted material without permission is not legal. Always ensure youre either creating your own or obtaining them from legitimate sources that allow sharing and downloading. Library Check if your local library offers eBook lending services. Many libraries have digital catalogs where you can borrow Modern Physics 1955 eBooks for free, including popular titles. Online Retailers: Websites like Amazon, Google Books, or Apple Books often sell eBooks. Sometimes, authors or publishers offer promotions or free periods for certain books. Authors Website Occasionally, authors provide excerpts or short stories for free on their websites. While this might not be the Modern Physics 1955 full book , it can give you a taste of the authors writing style. Subscription Services Platforms like Kindle Unlimited or Scribd offer subscription-based access to a wide range of Modern Physics 1955 eBooks, including some popular titles.

FAQs About Modern Physics 1955 Books

How do I know which eBook platform is the best for me? Finding the best eBook platform depends on your reading preferences and device compatibility. Research different platforms, read user reviews, and explore their features before

making a choice. Are free eBooks of good quality? Yes, many reputable platforms offer high-quality free eBooks, including classics and public domain works. However, make sure to verify the source to ensure the eBook credibility. Can I read eBooks without an eReader? Absolutely! Most eBook platforms offer web-based readers or mobile apps that allow you to read eBooks on your computer, tablet, or smartphone. How do I avoid digital eye strain while reading eBooks? To prevent digital eye strain, take regular breaks, adjust the font size and background color, and ensure proper lighting while reading eBooks. What the advantage of interactive eBooks? Interactive eBooks incorporate multimedia elements, quizzes, and activities, enhancing the reader engagement and providing a more immersive learning experience. Modern Physics 1955 is one of the best book in our library for free trial. We provide copy of Modern Physics 1955 in digital format, so the resources that you find are reliable. There are also many Ebooks of related with Modern Physics 1955. Where to download Modern Physics 1955 online for free? Are you looking for Modern Physics 1955 PDF? This is definitely going to save you time and cash in something you should think about.

Find Modern Physics 1955 :

rollercoaster science rigby literacy

rogers rules for success

robotech perfect collection vol 2

rockwell b1b sacs last bomber

rock folk

rodney peppe first nursery rhymes

rocky mountain ball

rock bottom an american heartland farmtown and family from settlement through

rockin las americas the global politics

rock wagram 1st edition

rolling over

rock rheology

roget international thesaurus

rocky mountain trout fishing

role of districts in fostering instructional improvement

Modern Physics 1955 :

Pseudomonas: Model Organism, Pathogen, Cell Factory Mar 26, 2008 — Concise and up-to-date, this handy guide fills a gap in the literature by providing the essential knowledge for everyone with an interest in ... Pseudomonas: Model Organism, Pathogen, Cell Factory. ... The two first chapters deal with comparative genomics of Pseudomonas genomes and P. aeruginosa infections in humans (in particular in cystic fibrosis patients), ... Pseudomonas: Model Organism, Pathogen, Cell Factory Concise and up-to-date, this handy guide fills a gap in the literature by providing the essential knowledge for everyone with an interest in the topic. Pseudomonas: Model Organism, Pathogen, Cell Factory This text is a comprehensive overview of the most important model organism in applied microbiology that covers basic biology, pathology and biotechnological ... Microbe Profile: Pseudomonas aeruginosa: opportunistic ... by SP Diggle · 2020 · Cited by 311 — Pseudomonas aeruginosa is a Gram-negative opportunistic pathogen and a model bacterium for studying virulence and bacterial social traits. Pseudomonas: Model Organism, Pathogen, Cell Factory ... Pseudomonas aeruginosa is a common bacterium found in a wide range of environments; it infects nematodes, insects, plants, and ameba in the laboratory and ... Bernd H.A. Rehm: Books Pseudomonas: Model Organism, Pathogen, Cell Factory. Pinch to zoom-in further. SEE MORE DETAILS. Pseudomonas: Model Organism, Pathogen, Cell Factory. Pseudomonas model organism pathogen cell factory ... May 16, 2023 — Thank you for reading pseudomonas model organism pathogen cell factory. Maybe you have knowledge that, people have search numerous times for. Pseudomonas: Model Organism, Pathogen, Cell Factory Pseudomonas: Model Organism, Pathogen, Cell Factory ... The result is a comprehensive overview of the most important model organism in applied microbiology that ... Pseudomonas: Model Organism, Pathogen, Cell Factory Jun 25, 2008 — Get Textbooks on Google Play. Rent and save from the world's largest eBookstore. Read, highlight, and take notes, across web, tablet, and phone. Fsa opinion writing prompt Opinion paper prompt that is SURE TO SPARK THEIR INTEREST! Developed for 4th/5th Grade Text-Based Writing . Written in Florida FSA ... FSA ELA Writing Practice Test Students will respond to either an informative/explanatory prompt or to an opinion/argumentation prompt. An example of a text-based writing prompt for each ... Grade 5 FSA ELA Writing Practice Test writing prompt for the FSA English Language Arts test. Students will respond to either an informative/explanatory prompt or to an opinion/argumentation prompt. Grade 4 FSA ELA Writing Practice Test writing prompt for the FSA English Language Arts test. Students will respond to either an informative/explanatory prompt or to an opinion/argumentation prompt. FSA Writing Prompts The assignment will ask for one multi-paragraph response in which you state your opinion on the topic you have just read about or write an informative essay. Mrs. Laura Camoesas / FSA Writing Resources Prompt & Texts for 5th Grade DOE Samples ... If you are having trouble viewing the document, you may download the document. Writing Assessments Writing will be computer-based in all assessed grades, and prompts will be in response to texts. Writing Resources. 2023-24 B.E.S.T. Writing Fact Sheet (PDF) ... Text-Based Writing Prompt Bundle (FSA

Style Opinion and ... Text-Based Writing Prompt Bundle (FSA Style Opinion and Informative). This is a bundle of all of the writing prompts and text sets in my store. Grades 4-5 FSA ELA Writing Training Test Questions Write an essay in which you give your opinion: Is clutter sometimes okay, or should you always try to be neat? Use the information from the passages in your ... 365 Science of Mind: A Year of Daily... by Holmes, Ernest This newly repackaged edition of one of Tarcher's bestselling Holmes backlist titles contains wisdom designed to help each reader experience the Science of Mind ... 365 Science of Mind: A Year of Daily Wisdom from Ernest ... This newly repackaged edition of one of Tarcher's bestselling Holmes backlist titles contains wisdom designed to help each reader experience the Science of Mind ... Download [PDF] 365 Science of Mind: A Year of Daily ... Jun 18, 2020 — Download [PDF] 365 Science of Mind: A Year of Daily Wisdom From Ernest Holmes Full-Acces · TAGS · acces · ratings · rates · ounces · inches ... 365 Science of Mind: A Year of Daily Wisdom (Softcover) Daily meditations are central to the Science of Mind philosophy : whatever a person believes is what he or she lives. From the early 1940s until his passing in ... 365 Science of Mind: A Year of Daily Wisdom from Ernest ... This newly repackaged edition of one of Tarcher's bestselling Holmes backlist titles contains wisdom designed to help each reader experience the Science of. 365 Science of Mind: A Year of Daily Wisdom... A companion volume to The Science of Mind presents a year's worth of daily meditations--complemented by scriptural passages and words of wisdom from great ... 365 Science of Mind: A Year of Daily Wisdom From Ernest ... A companion volume to The Science of Mind presents a year's worth of daily meditations--complemented by scriptural passages and words of wisdom from great ... 365 Science of Mind 365 Science of Mind. A Year of Daily Wisdom from. Ernest Holmes. A group for reflection and comment on the daily readings in this wonderful collection of 365 Science of Mind Quotes by Ernest Shurtleff Holmes 11 quotes from 365 Science of Mind: A Year of Daily Wisdom From Ernest Holmes: 'I believe that Love is at the center of everything; therefore, I accept L... 365 Ernest Holmes Daily Affirmations to Heal and Inspire ... Would you like to receive an affirmation by Ernest Holmes (the founder of the Science of Mind) in your email every day?