

Airy Functions And Applications To Physics 2nd Edition

THANK YOU FOR READING **AIRY FUNCTIONS AND APPLICATIONS TO PHYSICS 2ND EDITION**. AS YOU MAY KNOW, PEOPLE HAVE SEARCH HUNDREDS TIMES FOR THEIR CHOSEN READINGS LIKE THIS AIRY FUNCTIONS AND APPLICATIONS TO PHYSICS 2ND EDITION, BUT END UP IN INFECTIOUS DOWNLOADS. RATHER THAN READING A GOOD BOOK WITH A CUP OF TEA IN THE AFTERNOON, INSTEAD THEY JUGGLED WITH SOME HARMFUL VIRUS INSIDE THEIR LAPTOP.

AIRY FUNCTIONS AND APPLICATIONS TO PHYSICS 2ND EDITION IS AVAILABLE IN OUR BOOK COLLECTION AN ONLINE ACCESS TO IT IS SET AS PUBLIC SO YOU CAN GET IT INSTANTLY. OUR BOOKS COLLECTION SAVES IN MULTIPLE LOCATIONS, ALLOWING YOU TO GET THE MOST LESS LATENCY TIME TO DOWNLOAD ANY OF OUR BOOKS LIKE THIS ONE. MERELY SAID, THE AIRY FUNCTIONS AND APPLICATIONS TO PHYSICS 2ND EDITION IS UNIVERSALLY COMPATIBLE WITH ANY DEVICES TO READ

SPECIAL FUNCTIONS AND ORTHOGONAL POLYNOMIALS - AMS SPECIAL SESSION ON SPECIAL FUNCTIONS AND ORTHOGONAL POLYNOMIALS 2008

"THIS VOLUME CONTAINS FOURTEEN ARTICLES THAT REPRESENT THE AMS SPECIAL SESSION ON SPECIAL FUNCTIONS AND ORTHOGONAL POLYNOMIALS, HELD IN TUCSON, ARIZONA IN APRIL OF 2007. IT GIVES AN OVERVIEW OF THE MODERN FIELD OF SPECIAL FUNCTIONS WITH ALL MAJOR SUBFIELDS REPRESENTED, INCLUDING: APPLICATIONS TO ALGEBRAIC GEOMETRY, ASYMPTOTIC ANALYSIS, CONFORMAL MAPPING, DIFFERENTIAL EQUATIONS, ELLIPTIC FUNCTIONS, FRACTIONAL CALCULUS, HYPERGEOMETRIC AND Q-HYPERGEOMETRIC SERIES, NONLINEAR WAVES, NUMBER THEORY, SYMBOLIC AND NUMERICAL EVALUATION OF INTEGRALS, AND THETA FUNCTIONS. A FEW ARTICLES ARE EXPOSITORY, WITH EXTENSIVE BIBLIOGRAPHIES, BUT ALL CONTAIN ORIGINAL RESEARCH." "THIS BOOK IS INTENDED FOR PURE AND APPLIED MATHEMATICIANS WHO ARE INTERESTED IN RECENT DEVELOPMENTS IN THE THEORY OF SPECIAL FUNCTIONS. IT COVERS A WIDE RANGE OF ACTIVE AREAS OF RESEARCH AND DEMONSTRATES THE VITALITY OF THE FIELD."--BOOK JACKET.

OSCILLATORS - PATRICE SALZENSTEIN 2019-06-26

AN OSCILLATOR IS DEDICATED TO THE GENERATION OF SIGNALS. IT IS USED IN COMPUTERS, TELECOMS, WATCHMAKING, ASTRONOMY, AND METROLOGY. IT CAN BE A PENDULUM, AN ELECTRONIC OSCILLATOR BASED ON QUARTZ TECHNOLOGY, AN OPTOELECTRONIC OSCILLATOR, OR AN ATOMIC CLOCK, DEPENDING ON ITS APPLICATION. SINCE WATER CLOCKS OF ANTIQUITY, MECHANICAL CLOCKS INVENTED DURING THE THIRTEENTH CENTURY, AND THE DISCOVERY OF PIEZOELECTRICITY BY JACQUES AND PIERRE CURIE IN 1880, OSCILLATORS HAVE MADE GREAT PROGRESS. THIS BOOK DOES NOT ATTEMPT TO TELL THE STORY OF OSCILLATORS, BUT RATHER PROVIDES AN OVERVIEW OF PARTICULAR OSCILLATOR STRUCTURES THROUGH EXAMPLES FROM MATHEMATICS TO OSCILLATORS, AND FROM THE MILLIMETER SCALE TO THE VIBRATION OF A BUILDING, FOCUSING ON RECENT DEVELOPMENTS, AS WE LIVE IN A TIME WHEN TECHNOLOGY AND MATHEMATICAL ANALYSIS PLAY A VITAL ROLE.

AIRY FUNCTIONS AND APPLICATIONS TO PHYSICS (2ND EDITION) - VALLEE OLIVIER 2010-06-17

ADDRESSED MAINLY TO PHYSICIST AND CHEMICAL PHYSICIST, THIS TEXTBOOK IS THE RESULT OF A BROAD COMPILATION OF CURRENT KNOWLEDGE ON ANALYTICAL PROPERTIES OF AIRY FUNCTIONS. IN PARTICULAR, THE CALCULUS IMPLYING THE AIRY FUNCTIONS IS DEVELOPED WITH CARE. IN THE LATTER CHAPTERS, EXAMPLES ARE GIVEN TO SUCCINCTLY ILLUSTRATE THE USE OF AIRY FUNCTIONS IN CLASSICAL AND QUANTUM PHYSICS. THE PHYSICIST, FOR INSTANCE IN FLUID MECHANICS, CAN FIND WHAT HE IS LOOKING FOR, IN THE REFERENCES FOR WORKS OF MOLECULAR PHYSICS OR IN PHYSICS OF SURFACES, AND VICE VERSA. THE KNOWLEDGE ON AIRY FUNCTIONS IS FREQUENTLY REVIEWED. THE REASON MAY BE FOUND IN THE NEED TO EXPRESS A PHYSICAL PHENOMENON IN TERMS OF AN EFFECTIVE AND COMPREHENSIVE ANALYTICAL FORM FOR THE WHOLE SCIENTIFIC COMMUNITY. /A

INTRODUCTION TO QUANTUM MECHANICS - DAVID J. GRIFFITHS 2019-11-20

CHANGES AND ADDITIONS TO THE NEW EDITION OF THIS CLASSIC TEXTBOOK INCLUDE A NEW CHAPTER ON SYMMETRIES, NEW PROBLEMS AND EXAMPLES, IMPROVED EXPLANATIONS, MORE NUMERICAL PROBLEMS TO BE WORKED ON A COMPUTER, NEW APPLICATIONS TO SOLID STATE PHYSICS, AND CONSOLIDATED TREATMENT OF TIME-DEPENDENT POTENTIALS.

NONLINEAR PHOTONICS AND NOVEL OPTICAL PHENOMENA - ZHIGANG CHEN 2012-06-27

NONLINEAR PHOTONICS AND NOVEL OPTICAL PHENOMENA CONTAINS CONTRIBUTED CHAPTERS FROM LEADING EXPERTS IN NONLINEAR OPTICS AND PHOTONICS, AND PROVIDES A COMPREHENSIVE SURVEY OF FUNDAMENTAL CONCEPTS AS WELL AS HOT TOPICS IN CURRENT RESEARCH ON NONLINEAR OPTICAL WAVES AND RELATED NOVEL PHENOMENA. THE BOOK COVERS SELF-ACCELERATING AIRY BEAMS, INTEGRATED PHOTONICS BASED ON HIGH INDEX DOPED-SILICA GLASS, LINEAR AND NONLINEAR SPATIAL BEAM DYNAMICS IN PHOTONIC LATTICES AND WAVEGUIDE ARRAYS, THE THEORY OF POLARITON SOLITONS IN SEMICONDUCTOR MICROCAVITIES, AND TERAHERTZ WAVES.

FEW BODY METHODS - MOLECULAR & NUCLEAR PHYSICS INTERNATIONAL SYMPOSIUM ON FEW-BODY METHODS AND THEIR APPLICATIONS IN ATOMIC, AND CHEMISTRY (1985 : NANNING CHINA) 1986

PRINCETON COMPANION TO APPLIED MATHEMATICS - NICHOLAS J. HIGHAM 2015-09-09

THE MUST-HAVE COMPENDIUM ON APPLIED MATHEMATICS THIS IS THE MOST AUTHORITATIVE AND ACCESSIBLE SINGLE-VOLUME REFERENCE BOOK ON APPLIED MATHEMATICS. FEATURING NUMEROUS ENTRIES BY LEADING EXPERTS AND ORGANIZED THEMATICALLY, IT INTRODUCES READERS TO APPLIED MATHEMATICS AND ITS USES; EXPLAINS KEY CONCEPTS; DESCRIBES IMPORTANT EQUATIONS, LAWS, AND FUNCTIONS; LOOKS AT EXCITING AREAS OF RESEARCH; COVERS MODELING AND SIMULATION; EXPLORES AREAS OF APPLICATION; AND MORE. MODELED ON THE POPULAR PRINCETON COMPANION TO MATHEMATICS, THIS VOLUME IS AN INDISPENSABLE RESOURCE FOR UNDERGRADUATE AND GRADUATE STUDENTS, RESEARCHERS, AND PRACTITIONERS IN OTHER DISCIPLINES SEEKING A USER-FRIENDLY REFERENCE BOOK ON APPLIED MATHEMATICS. FEATURES NEARLY 200 ENTRIES ORGANIZED THEMATICALLY AND WRITTEN BY AN INTERNATIONAL TEAM OF DISTINGUISHED CONTRIBUTORS PRESENTS THE MAJOR IDEAS AND BRANCHES OF APPLIED MATHEMATICS IN A CLEAR AND ACCESSIBLE WAY EXPLAINS IMPORTANT MATHEMATICAL CONCEPTS, METHODS, EQUATIONS, AND APPLICATIONS INTRODUCES THE LANGUAGE OF APPLIED MATHEMATICS AND THE GOALS OF APPLIED MATHEMATICAL RESEARCH GIVES A WIDE RANGE OF EXAMPLES OF MATHEMATICAL MODELING COVERS CONTINUUM MECHANICS, DYNAMICAL SYSTEMS, NUMERICAL ANALYSIS, DISCRETE AND

COMBINATORIAL MATHEMATICS, MATHEMATICAL PHYSICS, AND MUCH MORE EXPLORES THE CONNECTIONS BETWEEN APPLIED MATHEMATICS AND OTHER DISCIPLINES INCLUDES SUGGESTIONS FOR FURTHER READING, CROSS-REFERENCES, AND A COMPREHENSIVE INDEX

INTRODUCTION TO QUANTUM MECHANICS - HARALD J W MÜLLER-KIRSTEN 2012-07-19

THIS TEXT ON QUANTUM MECHANICS BEGINS BY COVERING ALL THE MAIN TOPICS OF AN INTRODUCTION TO THE SUBJECT. IT THEN CONCENTRATES ON NEWER DEVELOPMENTS. IN PARTICULAR IT CONTINUES WITH THE PERTURBATIVE SOLUTION OF THE SCHRÖDINGER EQUATION FOR VARIOUS POTENTIALS AND THEREAFTER WITH THE INTRODUCTION AND EVALUATION OF THEIR PATH INTEGRAL COUNTERPARTS. CONSIDERATIONS OF THE LARGE ORDER BEHAVIOR OF THE PERTURBATION EXPANSIONS SHOW THAT IN MOST APPLICATIONS THESE ARE ASYMPTOTIC EXPANSIONS. THE PARALLEL CONSIDERATION OF PATH INTEGRALS REQUIRES THE EVALUATION OF THESE AROUND PERIODIC CLASSICAL CONFIGURATIONS, THE FLUCTUATION EQUATIONS ABOUT WHICH LEAD BACK TO SPECIFIC WAVE EQUATIONS. THE PERIOD OF THE CLASSICAL CONFIGURATIONS IS RELATED TO TEMPERATURE, AND PERMITS TRANSITIONS TO THE THERMAL DOMAIN TO BE CLASSIFIED AS PHASE TRANSITIONS. IN THIS SECOND EDITION OF THE TEXT IMPORTANT APPLICATIONS AND NUMEROUS EXAMPLES HAVE BEEN ADDED. IN PARTICULAR, THE CHAPTER ON THE COULOMB POTENTIAL HAS BEEN EXTENDED TO INCLUDE AN INTRODUCTION TO CHEMICAL BONDS, THE CHAPTER ON PERIODIC POTENTIALS HAS BEEN SUPPLEMENTED BY A SECTION ON THE BAND THEORY OF METALS AND SEMICONDUCTORS, AND IN THE CHAPTER ON LARGE ORDER BEHAVIOR A SECTION HAS BEEN ADDED ILLUSTRATING THE SUCCESS OF CONVERGING FACTORS IN THE EVALUATION OF ASYMPTOTIC EXPANSIONS. DETAILED CALCULATIONS PERMIT THE READER TO FOLLOW EVERY STEP.

MATHEMATICAL REVIEWS - 2006

NUCLEAR SCIENCE ABSTRACTS - 1967

BASICS OF STATISTICAL PHYSICS - HARALD J W MÜLLER-KIRSTEN 2013-03-25

STATISTICS LINKS MICROSCOPIC AND MACROSCOPIC PHENOMENA, AND REQUIRES FOR THIS REASON A LARGE NUMBER OF MICROSCOPIC ELEMENTS LIKE ATOMS. THE RESULTS ARE VALUES OF MAXIMUM PROBABILITY OR OF AVERAGING. THIS INTRODUCTION TO STATISTICAL PHYSICS CONCENTRATES ON THE BASIC PRINCIPLES, AND ATTEMPTS TO EXPLAIN THESE IN SIMPLE TERMS SUPPLEMENTED BY NUMEROUS EXAMPLES. THESE BASIC PRINCIPLES INCLUDE THE DIFFERENCE BETWEEN CLASSICAL AND QUANTUM STATISTICS, A PRIORI PROBABILITIES AS RELATED TO DEGENERACIES, THE VITAL ASPECT OF INDISTINGUISHABILITY AS COMPARED WITH DISTINGUISHABILITY IN CLASSICAL PHYSICS, THE DIFFERENCES BETWEEN CONSERVED AND NON-CONSERVED ELEMENTS, THE DIFFERENT WAYS OF COUNTING ARRANGEMENTS IN THE THREE STATISTICS (MAXWELL-BOLTZMANN, FERMI-DIRAC, BOSE-EINSTEIN), THE DIFFERENCE BETWEEN MAXIMIZATION OF THE NUMBER OF ARRANGEMENTS OF ELEMENTS, AND AVERAGING IN THE DARWIN-FOWLER METHOD. SIGNIFICANT APPLICATIONS TO SOLIDS, RADIATION AND ELECTRONS IN METALS ARE TREATED IN SEPARATE CHAPTERS, AS WELL AS BOSE-EINSTEIN CONDENSATION. THIS REVISED SECOND EDITION CONTAINS AN ADDITIONAL CHAPTER ON THE BOLTZMANN TRANSPORT EQUATION ALONG WITH APPROPRIATE APPLICATIONS. ALSO, MORE EXAMPLES HAVE BEEN ADDED THROUGHOUT, AS WELL AS FURTHER REFERENCES TO LITERATURE.

SPECIAL FUNCTIONS OF MATHEMATICS FOR ENGINEERS - LARRY C. ANDREWS 1998

MODERN ENGINEERING AND PHYSICAL SCIENCE APPLICATIONS DEMAND A THOROUGH KNOWLEDGE OF APPLIED MATHEMATICS, PARTICULARLY SPECIAL FUNCTIONS. THESE TYPICALLY ARISE IN APPLICATIONS SUCH AS COMMUNICATION SYSTEMS, ELECTRO-OPTICS, NONLINEAR WAVE PROPAGATION, ELECTROMAGNETIC THEORY, ELECTRIC CIRCUIT THEORY, AND QUANTUM MECHANICS. THIS TEXT SYSTEMATICALLY INTRODUCES SPECIAL FUNCTIONS AND EXPLORES THEIR PROPERTIES AND APPLICATIONS IN ENGINEERING AND SCIENCE.

NUMERICAL METHODS FOR SCIENTISTS AND ENGINEERS - H.M. ANTIA 2002-05-01

THIS BOOK PRESENTS AN EXHAUSTIVE AND IN-DEPTH EXPOSITION OF THE VARIOUS NUMERICAL METHODS USED IN SCIENTIFIC AND ENGINEERING COMPUTATIONS. IT EMPHASIZES THE PRACTICAL ASPECTS OF NUMERICAL COMPUTATION AND DISCUSSES VARIOUS TECHNIQUES IN SUFFICIENT DETAIL TO ENABLE THEIR IMPLEMENTATION IN SOLVING A WIDE RANGE OF PROBLEMS.

SINGULAR DIFFERENTIAL EQUATIONS AND SPECIAL FUNCTIONS - LUIS MANUEL BRAGA DA COSTA CAMPOS 2019-11-05

SINGULAR DIFFERENTIAL EQUATIONS AND SPECIAL FUNCTIONS IS THE FIFTH BOOK WITHIN ORDINARY DIFFERENTIAL EQUATIONS WITH APPLICATIONS TO TRAJECTORIES AND VIBRATIONS, SIX-VOLUME SET. AS A SET THEY ARE THE FOURTH VOLUME IN THE SERIES MATHEMATICS AND PHYSICS APPLIED TO SCIENCE AND TECHNOLOGY. THIS FIFTH BOOK CONSISTS OF ONE CHAPTER (CHAPTER 9 OF THE SET). THE CHAPTER STARTS WITH GENERAL CLASSES OF DIFFERENTIAL EQUATIONS AND SIMULTANEOUS SYSTEMS FOR WHICH THE PROPERTIES OF THE SOLUTIONS CAN BE ESTABLISHED 'A PRIORI', SUCH AS EXISTENCE AND UNICITY OF SOLUTION, ROBUSTNESS AND UNIFORMITY WITH REGARD TO CHANGES IN BOUNDARY CONDITIONS AND PARAMETERS, AND STABILITY AND ASYMPTOTIC BEHAVIOR. THE BOOK PROCEEDS TO CONSIDER THE MOST IMPORTANT CLASS OF LINEAR DIFFERENTIAL EQUATIONS WITH VARIABLE COEFFICIENTS, THAT CAN BE ANALYTIC FUNCTIONS OR HAVE REGULAR OR IRREGULAR SINGULARITIES. THE SOLUTION OF SINGULAR DIFFERENTIAL EQUATIONS BY MEANS OF (i) POWER SERIES; (ii) PARAMETRIC INTEGRAL TRANSFORMS; AND (iii) CONTINUED FRACTIONS LEAD TO MORE THAN 20 SPECIAL FUNCTIONS; AMONG THESE IS

GIVEN GREATER ATTENTION TO GENERALIZED CIRCULAR, HYPERBOLIC, AIRY, BESSEL AND HYPERGEOMETRIC DIFFERENTIAL EQUATIONS, AND THE SPECIAL FUNCTIONS THAT SPECIFY THEIR SOLUTIONS. INCLUDES EXISTENCE, UNICITY, ROBUSTNESS, UNIFORMITY, AND OTHER THEOREMS FOR NON-LINEAR DIFFERENTIAL EQUATIONS DISCUSSES PROPERTIES OF DYNAMICAL SYSTEMS DERIVED FROM THE DIFFERENTIAL EQUATIONS DESCRIBING THEM, USING METHODS SUCH AS LIAPUNOV FUNCTIONS INCLUDES LINEAR DIFFERENTIAL EQUATIONS WITH PERIODIC COEFFICIENTS, INCLUDING FLOQUET THEORY, HILL INFINITE DETERMINANTS AND MULTIPLE PARAMETRIC RESONANCE DETAILS THEORY OF THE GENERALIZED BESSEL DIFFERENTIAL EQUATION, AND OF THE GENERALIZED, GAUSSIAN, CONFLUENT AND EXTENDED HYPERGEOMETRIC FUNCTIONS AND RELATIONS WITH OTHER 20 SPECIAL FUNCTIONS EXAMINES LINEAR DIFFERENTIAL EQUATIONS WITH ANALYTIC COEFFICIENTS OR REGULAR OR IRREGULAR SINGULARITIES, AND SOLUTIONS VIA POWER SERIES, PARAMETRIC INTEGRAL TRANSFORMS, AND CONTINUED FRACTIONS

INTEGRALS AND SERIES: SPECIAL FUNCTIONS - ANATOLIĬ PLATONOVICH PRUDNIKOV 1986

MATHEMATICAL METHODS FOR PHYSICS AND ENGINEERING - K. F. RILEY 2006-03-13

THE THIRD EDITION OF THIS HIGHLY ACCLAIMED UNDERGRADUATE TEXTBOOK IS SUITABLE FOR TEACHING ALL THE MATHEMATICS FOR AN UNDERGRADUATE COURSE IN ANY OF THE PHYSICAL SCIENCES. AS WELL AS LUCID DESCRIPTIONS OF ALL THE TOPICS AND MANY WORKED EXAMPLES, IT CONTAINS OVER 800 EXERCISES. NEW STAND-ALONE CHAPTERS GIVE A SYSTEMATIC ACCOUNT OF THE 'SPECIAL FUNCTIONS' OF PHYSICAL SCIENCE, COVER AN EXTENDED RANGE OF PRACTICAL APPLICATIONS OF COMPLEX VARIABLES, AND GIVE AN INTRODUCTION TO QUANTUM OPERATORS. FURTHER TABULATIONS, OF RELEVANCE IN STATISTICS AND NUMERICAL INTEGRATION, HAVE BEEN ADDED. IN THIS EDITION, HALF OF THE EXERCISES ARE PROVIDED WITH HINTS AND ANSWERS AND, IN A SEPARATE MANUAL AVAILABLE TO BOTH STUDENTS AND THEIR TEACHERS, COMPLETE WORKED SOLUTIONS. THE REMAINING EXERCISES HAVE NO HINTS, ANSWERS OR WORKED SOLUTIONS AND CAN BE USED FOR UNAIDED HOMEWORK; FULL SOLUTIONS ARE AVAILABLE TO INSTRUCTORS ON A PASSWORD-PROTECTED WEB SITE, [WWW.CAMBRIDGE.ORG/9780521679718](http://www.cambridge.org/9780521679718).

ATOMIC AND MOLECULAR SCATTERING - BERNI ALDER 2012-12-02

METHODS IN COMPUTATIONAL PHYSICS, VOLUME 10: ATOMIC AND MOLECULAR SCATTERING PRESENTS THE DIGITAL METHODS USED IN PRODUCING QUANTITATIVE RESULTS FROM THE THEORY OF ATOMIC AND MOLECULAR SCATTERING. THIS VOLUME CONTAINS SEVEN CHAPTERS THAT SPECIFICALLY CONSIDER THE METHODS THAT PRODUCE QUANTUM MECHANICAL WAVEFUNCTIONS FROM WHICH CROSS SECTIONS ARE DEDUCED. CHAPTER 1 COVERS THE SOLUTIONS OF THE SYSTEMS OF COUPLED INTEGRO-DIFFERENTIAL EQUATIONS USING THE HARTREE AND HARTREE-FOCK METHODS FOR ATOMIC STRUCTURE CALCULATIONS AND THE EIGENFUNCTION EXPANSION METHOD FOR ELECTRON-ATOM COLLISION CALCULATIONS. CHAPTER 2 TREATS THE TRANSLATION OF THE FORMAL RESULTS INTO A GENERALLY APPLICABLE, EFFICIENT, AND NUMERICALLY STABLE METHOD FOR SOLVING QUANTUM-MECHANICAL SCATTERING PROBLEMS. CHAPTER 3 DISCUSSES THE EXPONENTIAL METHOD OF SOLUTION AS APPLIED IN INELASTIC SCATTERING, THE REACTION COORDINATES FOR A COLLINEAR REACTIVE SYSTEM, AND THE MODIFICATIONS OF THE COMPUTATIONAL METHOD REQUIRED FOR REACTIVE SCATTERING. CHAPTER 4 OUTLINES THE THEORY AND THE CALCULATIONAL TECHNIQUES INVOLVED IN THE USE OF ALGEBRAIC EXPANSIONS IN SCATTERING PROBLEMS, WHILE CHAPTER 5 DEALS WITH THE SOLUTION OF THE CLOSE-COUPLED EQUATIONS. CHAPTER 6 EVALUATES THE COLLISION BETWEEN TWO QUANTUM-MECHANICAL SYSTEMS WITH INTERNAL STRUCTURE USING THE QUANTUM-MECHANICAL OPERATOR EQUATIONS. LASTLY, CHAPTER 7 FOCUSES ON THE PRINCIPLES AND APPLICATIONS OF CLASSICAL TRAJECTORY METHODS.

NUMERICAL METHODS FOR SPECIAL FUNCTIONS - AMPARO GIL 2007-01-01

SPECIAL FUNCTIONS ARISE IN MANY PROBLEMS OF PURE AND APPLIED MATHEMATICS, MATHEMATICAL STATISTICS, PHYSICS, AND ENGINEERING. THIS BOOK PROVIDES AN UP-TO-DATE OVERVIEW OF NUMERICAL METHODS FOR COMPUTING SPECIAL FUNCTIONS AND DISCUSSES WHEN TO USE THESE METHODS DEPENDING ON THE FUNCTION AND THE RANGE OF PARAMETERS. NOT ONLY ARE STANDARD AND SIMPLE PARAMETER DOMAINS CONSIDERED, BUT METHODS VALID FOR LARGE AND COMPLEX PARAMETERS ARE DESCRIBED AS WELL. THE FIRST PART OF THE BOOK (BASIC METHODS) COVERS CONVERGENT AND DIVERGENT SERIES, CHEBYSHEV EXPANSIONS, NUMERICAL QUADRATURE, AND RECURRENCE RELATIONS. ITS FOCUS IS ON THE COMPUTATION OF SPECIAL FUNCTIONS; HOWEVER, IT IS SUITABLE FOR GENERAL NUMERICAL COURSES. PSEUDOALGORITHMS ARE GIVEN TO HELP STUDENTS WRITE THEIR OWN ALGORITHMS. IN ADDITION TO THESE BASIC TOOLS, THE AUTHORS DISCUSS OTHER USEFUL AND EFFICIENT METHODS, SUCH AS METHODS FOR COMPUTING ZEROS OF SPECIAL FUNCTIONS, UNIFORM ASYMPTOTIC EXPANSIONS, PADÉ APPROXIMATIONS, AND SEQUENCE TRANSFORMATIONS. THE BOOK ALSO PROVIDES SPECIFIC ALGORITHMS FOR COMPUTING SEVERAL SPECIAL FUNCTIONS (LIKE AIRY FUNCTIONS AND PARABOLIC CYLINDER FUNCTIONS, AMONG OTHERS).

TOPICS IN PERCOLATIVE AND DISORDERED SYSTEMS - ALEJANDRO F. RAMÍREZ 2014-06-16

THIS VOLUME FEATURES SELECTED AND PEER-REVIEWED ARTICLES FROM THE PAN-AMERICAN ADVANCED STUDIES INSTITUTE (PASI). THE CHAPTERS ARE WRITTEN BY INTERNATIONAL SPECIALISTS WHO PARTICIPATED IN THE CONFERENCE. TOPICS INCLUDE DEVELOPMENTS BASED ON BREAKTHROUGHS IN THE MATHEMATICAL UNDERSTANDING OF PHENOMENA DESCRIBING SYSTEMS IN HIGHLY INHOMOGENEOUS AND DISORDERED MEDIA, INCLUDING THE KPZ UNIVERSALITY CLASS (DESCRIBING THE EVOLUTION OF INTERFACES IN TWO DIMENSIONS), RANDOM WALKS IN RANDOM ENVIRONMENT AND PERCOLATIVE SYSTEMS. PASI FOSTERS A COLLABORATION BETWEEN NORTH AMERICAN AND LATIN AMERICAN RESEARCHERS AND STUDENTS. THE CONFERENCE THAT INSPIRED THIS VOLUME TOOK PLACE IN JANUARY 2012 IN BOTH SANTIAGO DE CHILE AND BUENOS AIRES. RESEARCHERS AND GRADUATE STUDENTS WILL FIND TIMELY RESEARCH IN PROBABILITY THEORY, STATISTICAL PHYSICS AND RELATED DISCIPLINES.

THE PHYSICS OF SYNCHROTRON RADIATION - ALBERT HOFMANN 2004-05-13

THIS BOOK EXPLAINS THE UNDERLYING PHYSICS OF SYNCHROTRON RADIATION AND DERIVES ITS MAIN PROPERTIES. IT IS DIVIDED INTO FOUR PARTS. THE FIRST COVERS THE GENERAL CASE OF THE ELECTROMAGNETIC FIELDS CREATED BY AN ACCELERATED RELATIVISTIC CHARGE. THE SECOND PART CONCENTRATES ON THE RADIATION EMITTED BY A CHARGE MOVING ON A CIRCULAR TRAJECTORY. THE THIRD LOOKS AT UNDULATOR RADIATION, COVERING PLANE

WEAK UNDULATORS, STRONG UNDULATORS AND OTHER MORE GENERAL UNDULATORS. THE FINAL PART DEALS WITH APPLICATIONS AND INVESTIGATES THE OPTICS OF SYNCHROTRON RADIATION DOMINATED BY DIFFRACTION DUE TO THE SMALL OPENING ANGLE. IT ALSO INCLUDES A DESCRIPTION OF ELECTRON STORAGE RINGS AS RADIATION SOURCES AND THE EFFECT OF THE EMITTED RADIATION ON THE ELECTRON BEAM. THIS BOOK PROVIDES A VALUABLE REFERENCE FOR SCIENTISTS AND ENGINEERS IN THE FIELD OF ACCELERATORS, AND ALL USERS OF SYNCHROTRON RADIATION.

SPECIAL FUNCTIONS FOR OPTICAL SCIENCE AND ENGINEERING - VASUDEVAN LAKSHMINARAYANAN 2015

THIS TUTORIAL TEXT IS FOR THOSE WHO USE SPECIAL FUNCTIONS IN THEIR WORK OR STUDY BUT ARE NOT MATHEMATICIANS. TRADITIONALLY, SPECIAL FUNCTIONS ARISE AS SOLUTIONS TO CERTAIN LINEAR SECOND-ORDER DIFFERENTIAL EQUATIONS WITH VARIABLE COEFFICIENTS. THIS BOOK INTRODUCES THESE DIFFERENTIAL EQUATIONS, THEIR SOLUTIONS, AND THEIR APPLICATIONS IN OPTICAL SCIENCE AND ENGINEERING.

PUBLICATIONS OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ... CATALOG - NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (U.S.) 1991

GUIDED-WAVE OPTICS - BORIS MALOMED 2018-03-23

THIS BOOK IS A PRINTED EDITION OF THE SPECIAL ISSUE "GUIDED-WAVE OPTICS" THAT WAS PUBLISHED IN APPLIED SCIENCES

SYNCHROTRON RADIATION SOURCES AND APPLICATIONS - G.N GREAVES 1989-01-01
SYNCHROTRON RADIATION FACILITIES EMBRACE AN UNUSUALLY WIDE RANGE OF SCIENTIFIC AND TECHNICAL SKILLS, INCLUDING HIGH BRILLIANCE ELECTRON ACCELERATOR TECHNOLOGY, ULTRA HIGH VACUUM PRECISION ENGINEERING, AND BEAMLINE OPTICAL ENGINEERING. WITH INDIVIDUAL CONTRIBUTIONS FROM SPECIALISTS IN EACH AREA, SYNCHROTRON RADIATION SOURCES AND APPLICATIONS COMPREHENSIVELY COVERS VARIOUS TOPICS, FROM THE BASIC THEORY OF SYNCHROTRON RADIATION TO ITS USES AS AN EXPERIMENTAL TOOL IN ATOMIC, MOLECULAR, AND SOLID-STATE PHYSICS.

A TREATISE ON THE THEORY OF BESSEL FUNCTIONS - GEORGE NEVILLE WATSON 1922

SPECIAL FUNCTIONS & THEIR APPLICATIONS - N. N. LEBEDEV 2012-04-30

FAMOUS RUSSIAN WORK DISCUSSES THE APPLICATION OF CYLINDER FUNCTIONS AND SPHERICAL HARMONICS; GAMMA FUNCTION; PROBABILITY INTEGRAL AND RELATED FUNCTIONS; AIRY FUNCTIONS; HYPER-GEOMETRIC FUNCTIONS; MORE. TRANSLATED BY RICHARD SILVERMAN.

CRC CONCISE ENCYCLOPEDIA OF MATHEMATICS - ERIC W. WEISSTEIN 2002-12-12

UPON PUBLICATION, THE FIRST EDITION OF THE CRC CONCISE ENCYCLOPEDIA OF MATHEMATICS RECEIVED OVERWHELMING ACCOLADES FOR ITS UNPARALLELED SCOPE, READABILITY, AND UTILITY. IT SOON TOOK ITS PLACE AMONG THE TOP SELLING BOOKS IN THE HISTORY OF CHAPMAN & HALL/CRC, AND ITS POPULARITY CONTINUES UNABATED. YET ALSO UNABATED HAS BEEN THE D

ORDER, DISORDER AND CRITICALITY - ADVANCED PROBLEMS OF PHASE TRANSITION THEORY -- HOLOVATCH YURIJ 2017-12-28

THIS BOOK IS THE FIFTH VOLUME OF PAPERS ON ADVANCED PROBLEMS OF PHASE TRANSITIONS AND CRITICAL PHENOMENA, THE FIRST FOUR VOLUMES APPEARED IN 2004, 2007, 2012, AND 2015. IT AIMS TO COMPILE REVIEWS IN THOSE ASPECTS OF CRITICALITY AND RELATED SUBJECTS THAT ARE OF CURRENT INTEREST. THE SEVEN CHAPTERS DISCUSS CRITICALITY OF COMPLEX SYSTEMS, WHERE THE NEW, EMERGENT PROPERTIES APPEAR VIA COLLECTIVE BEHAVIOUR OF SIMPLE ELEMENTS. SINCE ALL COMPLEX SYSTEMS INVOLVE COOPERATIVE BEHAVIOUR BETWEEN MANY INTERCONNECTED COMPONENTS, THE FIELD OF PHASE TRANSITIONS AND CRITICAL PHENOMENA PROVIDES A VERY NATURAL CONCEPTUAL AND METHODOLOGICAL FRAMEWORK FOR THEIR STUDY. AS THE FIRST FOUR VOLUMES, THIS BOOK IS BASED ON THE REVIEW LECTURES THAT WERE GIVEN IN LVIV (UKRAINE) AT THE "ISING LECTURES" — A TRADITIONAL ANNUAL WORKSHOP ON PHASE TRANSITIONS AND CRITICAL PHENOMENA WHICH AIMS TO BRING TOGETHER SCIENTISTS WORKING IN THE FIELD OF PHASE TRANSITIONS WITH UNIVERSITY STUDENTS AND THOSE WHO ARE INTERESTED IN THE SUBJECT. CONTENTS: STATISTICAL PROPERTIES OF ONE-DIMENSIONAL DIRECTED POLYMERS IN A RANDOM POTENTIAL (V DOTSENKO)NON-EUCLIDEAN GEOMETRY IN NATURE (S NECHAEV)DYNAMICS OF POLYMERS: CLASSIC RESULTS AND RECENT DEVELOPMENTS (M V TAMM AND K POLOVNIKOV)GENERALIZED ENSEMBLE COMPUTER SIMULATIONS OF MACROMOLECULES (W JANKE)PHOTO-CONTROLLABLE NETWORKS IN MACROMOLECULAR SOLUTIONS AND BLENDS (J M ILNYTSKYI)MONTE CARLO METHODS FOR MASSIVELY PARALLEL COMPUTERS (M WEIGEL)COMPLEX NETWORKS AND INFRASTRUCTURAL GRIDS (A SCALA) READERSHIP: ADVANCED UNDERGRADUATES AND GRADUATE STUDENTS, RESEARCHERS AND SCIENTISTS INTERESTED IN PHASE TRANSITIONS AND CRITICAL PHENOMENA. KEYWORDS: PHASE TRANSITIONS;CRITICALITY;SCALING;COMPLEX SYSTEMSREVIEW:0

THE LATEX WEB COMPANION - MICHEL GOOSSENS 1999

INDEX ABREVIADO: 1.THE WEB, ITS DOCUMENTS, AND LATEX 2. PORTABLE DOCUMENT FORMAT 3. THE LATEX2HTML TRANSLATOR 4. TRANSLATING LATEX TO HTML USING TEXT4HT 5. DIRECT DISPLAY OF LATEX ON THE WEB 6. HTML, SGML, AND XML: THREE MARKUP LANGUAGES 7. CSS, DSSSL, AND XSL: DOING IT WITH STYLE 8. MATHML, INTELLIGENT MATH MARKUP A. EXAMPLE FILES B. TECHNICAL APPENDICES C. INTERNALIZATION ISSUES.

SPECIAL FUNCTIONS IN PHYSICS WITH MATLAB - WOLFGANG SCHWEIZER 2021-03-25

THIS HANDBOOK FOCUSES ON SPECIAL FUNCTIONS IN PHYSICS IN THE REAL AND COMPLEX DOMAIN. IT COVERS MORE THAN 170 DIFFERENT FUNCTIONS WITH ADDITIONAL NUMERICAL HINTS FOR EFFICIENT COMPUTATION, WHICH ARE USEFUL TO ANYONE WHO NEEDS TO PROGRAM WITH OTHER PROGRAMMING LANGUAGES AS WELL. THE BOOK COMES WITH MATLAB-BASED PROGRAMS FOR EACH OF THESE FUNCTIONS AND A DETAILED HTML-BASED DOCUMENTATION. SOME OF THE EXPLAINED FUNCTIONS ARE: GAMMA AND BETA FUNCTIONS; LEGENDRE FUNCTIONS, WHICH ARE LINKED TO QUANTUM MECHANICS AND ELECTRODYNAMICS; BESSEL FUNCTIONS; HYPERGEOMETRIC FUNCTIONS, WHICH PLAY AN IMPORTANT ROLE IN MATHEMATICAL PHYSICS; ORTHOGONAL POLYNOMIALS, WHICH ARE LARGELY USED IN COMPUTATIONAL PHYSICS; AND RIEMANN ZETA FUNCTIONS, WHICH PLAY AN IMPORTANT ROLE, E.G., IN QUANTUM CHAOS OR STRING THEORY. THE BOOK'S PRIMARY AUDIENCE ARE SCIENTISTS, PROFESSIONALS WORKING IN RESEARCH AREAS OF INDUSTRIES, AND ADVANCED STUDENTS IN PHYSICS, APPLIED MATHEMATICS, AND ENGINEERING.

A DIRECTORY OF COMPUTER SOFTWARE APPLICATIONS, PHYSICS, 1970-MAY 1978 - UNITED STATES. NATIONAL TECHNICAL INFORMATION SERVICE 1978

SCIENTIFIC AND TECHNICAL AEROSPACE REPORTS - 1992

INTEGRALS OF AIRY FUNCTIONS - UNITED STATES. NATIONAL BUREAU OF STANDARDS 1958

MATHEMATICAL ANALYSIS, APPROXIMATION THEORY AND THEIR APPLICATIONS - THEMISTOCLES M. RASSIAS 2016-06-03

DESIGNED FOR GRADUATE STUDENTS, RESEARCHERS, AND ENGINEERS IN MATHEMATICS, OPTIMIZATION, AND ECONOMICS, THIS SELF-CONTAINED VOLUME PRESENTS THEORY, METHODS, AND APPLICATIONS IN MATHEMATICAL ANALYSIS AND APPROXIMATION THEORY. SPECIFIC TOPICS INCLUDE: APPROXIMATION OF FUNCTIONS BY LINEAR POSITIVE OPERATORS WITH APPLICATIONS TO COMPUTER AIDED GEOMETRIC DESIGN, NUMERICAL ANALYSIS, OPTIMIZATION THEORY, AND SOLUTIONS OF DIFFERENTIAL EQUATIONS. RECENT AND SIGNIFICANT DEVELOPMENTS IN APPROXIMATION THEORY, SPECIAL FUNCTIONS AND Q -CALCULUS ALONG WITH THEIR APPLICATIONS TO MATHEMATICS, ENGINEERING, AND SOCIAL SCIENCES ARE DISCUSSED AND ANALYZED. EACH CHAPTER ENRICHES THE UNDERSTANDING OF CURRENT RESEARCH PROBLEMS AND THEORIES IN PURE AND APPLIED RESEARCH.

NIST HANDBOOK OF MATHEMATICAL FUNCTIONS HARDBACK AND CD-ROM - NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (U.S.) 2010-05-17

THE NEW STANDARD REFERENCE ON MATHEMATICAL FUNCTIONS, REPLACING THE CLASSIC BUT OUTDATED HANDBOOK FROM ABRAMOWITZ AND STEGUN. INCLUDES PDF VERSION.

AIRY FUNCTIONS AND APPLICATIONS TO PHYSICS (2ND EDITION) - 2010

"ADDRESSED MAINLY TO PHYSICIST AND CHEMICAL PHYSICIST, THIS TEXTBOOK IS THE RESULT OF A BROAD COMPILATION OF CURRENT KNOWLEDGE ON ANALYTICAL PROPERTIES OF AIRY FUNCTIONS. IN PARTICULAR, THE CALCULUS IMPLYING THE AIRY FUNCTIONS IS DEVELOPED WITH CARE. IN THE LATTER CHAPTERS, EXAMPLES ARE GIVEN TO SUCCINCTLY ILLUSTRATE THE USE OF AIRY FUNCTIONS IN CLASSICAL AND QUANTUM PHYSICS. THE PHYSICIST, FOR INSTANCE IN FLUID MECHANICS, CAN FIND WHAT HE IS LOOKING FOR, IN THE REFERENCES FOR WORKS OF MOLECULAR PHYSICS OR IN PHYSICS OF SURFACES, AND VICE VERSA."--PUBLISHER'S WEBSITE.

PAINLEVE TRANSCENDENTS - A. S. FOKAS 2006

AT THE TURN OF THE TWENTIETH CENTURY, THE FRENCH MATHEMATICIAN PAUL PAINLEVE AND HIS STUDENTS CLASSIFIED SECOND ORDER NONLINEAR ORDINARY DIFFERENTIAL EQUATIONS WITH THE PROPERTY THAT THE LOCATION OF POSSIBLE BRANCH POINTS AND ESSENTIAL SINGULARITIES OF THEIR SOLUTIONS DOES NOT DEPEND ON INITIAL CONDITIONS. IT TURNED OUT THAT THERE ARE ONLY SIX SUCH EQUATIONS (UP TO NATURAL EQUIVALENCE), WHICH LATER BECAME KNOWN AS PAINLEVE I-VI. ALTHOUGH THESE EQUATIONS WERE INITIALLY OBTAINED ANSWERING A STRICTLY MATHEMATICAL QUESTION, THEY APPEARED LATER IN AN ASTONISHING (AND GROWING) RANGE OF APPLICATIONS, INCLUDING, E.G., STATISTICAL PHYSICS, FLUID MECHANICS, RANDOM MATRICES, AND ORTHOGONAL POLYNOMIALS. ACTUALLY, IT IS NOW BECOMING CLEAR THAT THE PAINLEVE TRANSCENDENTS (I.E., THE SOLUTIONS OF THE PAINLEVE EQUATIONS) PLAY THE SAME ROLE IN NONLINEAR MATHEMATICAL PHYSICS THAT THE CLASSICAL SPECIAL FUNCTIONS, SUCH AS AIRY AND BESSEL FUNCTIONS, PLAY IN LINEAR PHYSICS. THE EXPLICIT FORMULAS RELATING THE ASYMPTOTIC BEHAVIOUR OF THE CLASSICAL SPECIAL FUNCTIONS AT DIFFERENT CRITICAL POINTS, PLAY A CRUCIAL ROLE IN THE APPLICATIONS OF THESE FUNCTIONS. IT IS SHOWN IN THIS BOOK, THAT EVEN THOUGH THE SIX PAINLEVE EQUATIONS ARE NONLINEAR, IT IS STILL POSSIBLE, USING A NEW TECHNIQUE CALLED THE RIEMANN-HILBERT FORMALISM, TO OBTAIN ANALOGOUS EXPLICIT FORMULAS FOR THE PAINLEVE TRANSCENDENTS. THIS STRIKING FACT, APPARENTLY UNKNOWN TO PAINLEVE AND HIS CONTEMPORARIES, IS THE KEY INGREDIENT FOR THE REMARKABLE APPLICABILITY OF THESE "NONLINEAR SPECIAL FUNCTIONS". THE BOOK DESCRIBES IN DETAIL THE RIEMANN-HILBERT METHOD AND EMPHASIZES ITS CLOSE CONNECTION TO CLASSICAL MONODROMY THEORY OF LINEAR EQUATIONS AS WELL AS TO MODERN THEORY OF INTEGRABLE SYSTEMS. IN ADDITION, THE BOOK CONTAINS AN AMPLE COLLECTION OF MATERIAL CONCERNING THE ASYMPTOTICS OF THE PAINLEVE FUNCTIONS AND THEIR VARIOUS APPLICATIONS, WHICH MAKES IT A GOOD REFERENCE SOURCE FOR EVERYONE WORKING IN THE THEORY AND APPLICATIONS OF PAINLEVE EQUATIONS AND RELATED AREAS.

INTRODUCTION TO BESSEL FUNCTIONS - FRANK BOWMAN 2012-04-27

SELF-CONTAINED TEXT, USEFUL FOR CLASSROOM OR INDEPENDENT STUDY, COVERS BESSEL FUNCTIONS OF ZERO ORDER, MODIFIED BESSEL FUNCTIONS, DEFINITE INTEGRALS, ASYMPTOTIC EXPANSIONS, AND BESSEL FUNCTIONS OF ANY REAL ORDER. 226 PROBLEMS.

HANDBOOK OF MATHEMATICAL FUNCTIONS - MILTON ABRAMOWITZ 1965-01-01

AN EXTENSIVE SUMMARY OF MATHEMATICAL FUNCTIONS THAT OCCUR IN PHYSICAL AND ENGINEERING PROBLEMS

1984-08-31

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