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CHAIN CONJECTURES IN RING THEORY FROBENIUS DISTRIBUTIONS: LANG-TROTTER AND SATO-TATE CONJECTURES CONJECTURES IN ARITHMETIC ALGEBRAIC GEOMETRY THE DYNAMICAL MORDELL-LANG CONJECTURE A PROOF OF ALON'S SECOND EIGENVALUE CONJECTURE AND RELATED PROBLEMS THE SMITH CONJECTURE HOD MICE AND THE MOUSE SET CONJECTURE THE GEOMETRIZATION CONJECTURE THE ART OF CAUSAL CONJECTURE PSEUDO-DIFFERENTIAL OPERATORS WITH DISCONTINUOUS SYMBOLS: WIDOM'S CONJECTURE RICCI FLOW AND THE POINCARÉ CONJECTURE THE NOVIKOV CONJECTURE INTRODUCTION TO SYMPLECTIC TOPOLOGY THE FASCINATING WORLD OF GRAPH THEORY THE ART OF CONJECTURE THE SCIENCE OF CONJECTURE POINT-COUNTING AND THE ZILBER-PINK CONJECTURE THE ART OF CONJECTURE THE MORDELL CONJECTURE KRZYZ CONJECTURE, THE: THEORY AND METHODS THE SAGE HANDBOOK OF THE PHILOSOPHY OF SOCIAL SCIENCES A MORSE-BOTT APPROACH TO MONOPOLE FLOER HOMOLOGY AND THE TRIANGULATION CONJECTURE THE POINCARÉ CONJECTURE VOLUME CONJECTURE FOR KNOTS THE ART OF CONJECTURE CHARACTER THEORY AND THE MCKAY CONJECTURE REALISM AND THE AIM OF SCIENCE INTRODUCTION TO ALGEBRAIC INDEPENDENCE THEORY LINEAR ORDERINGS QUANTIZED NUMBER THEORY, FRACTAL STRINGS AND THE RIEMANN HYPOTHESIS: FROM SPECTRAL OPERATORS TO PHASE TRANSITIONS AND UNIVERSALITY SATAN THE ANTI-CHRIST AND THE FALSE PROPHET PHILOSOPHY OF MATHEMATICS EXTRINSIC GEOMETRIC FLOWS THE MATHEMATICS OF SHOCK REFLECTION-DIFFRACTION AND VON NEUMANN'S CONJECTURES CLASSICAL AND QUANTUM DYNAMICS OF CONSTRAINED HAMILTONIAN SYSTEMS CATALAN'S CONJECTURE CONFORMAL INVARIANTS, INEQUALITIES, AND QUASICONFORMAL MAPS HODGE THEORY (MN-49) 2019-20 MATRIX ANNALS GEOMETRY

CHAIN CONJECTURES IN RING THEORY 2006-11-15 THIS VOLUME CONTAINS THE PROCEEDINGS OF THE WINTER SCHOOL AND WORKSHOP ON FROBENIUS DISTRIBUTIONS ON CURVES HELD FROM FEBRUARY 17-21 2014 AND FEBRUARY 24-28 2014 AT THE CENTRE INTERNATIONAL DE RENCONTRES MATHÉMATIQUES MARSEILLE FRANCE THIS VOLUME GIVES A REPRESENTATIVE SAMPLE OF CURRENT RESEARCH AND DEVELOPMENTS IN THE RAPIDLY DEVELOPING AREAS OF FROBENIUS DISTRIBUTIONS THIS IS MOSTLY DRIVEN BY TWO FAMOUS CONJECTURES THE SATO-TATE CONJECTURE WHICH HAS BEEN RECENTLY PROVED FOR ELLIPTIC CURVES BY L. CLOZEL, M. HARRIS AND R. TAYLOR AND THE LANG-TROTTER CONJECTURE WHICH IS STILL WIDELY OPEN INVESTIGATIONS IN THIS AREA ARE BASED ON A FINE MIX OF ALGEBRAIC, ANALYTIC AND COMPUTATIONAL TECHNIQUES AND THE PAPERS CONTAINED IN THIS VOLUME GIVE A BALANCED PICTURE OF THESE APPROACHES

FROBENIUS DISTRIBUTIONS: LANG-TROTTER AND SATO-TATE CONJECTURES 2016-04-26 IN THE EARLY 1980S STIMULATED BY WORK OF BLOCH AND DELIGNE, BEILINSON STATED SOME INTRIGUING CONJECTURES ON SPECIAL VALUES OF L-FUNCTIONS OF ALGEBRAIC VARIETIES DEFINED OVER NUMBER FIELDS. ROUGHLY SPEAKING, THESE SPECIAL VALUES ARE DETERMINANTS OF HIGHER REGULATOR MAPS RELATING THE HIGHER ALGEBRAIC K-GROUPS OF THE VARIETY TO ITS COHOMOLOGY. IN THIS RESPECT, HIGHER ALGEBRAIC K-THEORY IS BELIEVED TO PROVIDE A UNIVERSAL MOTIVIC COHOMOLOGY THEORY AND THE REGULATOR MAPS ARE DETERMINED BY CHERN CHARACTERS FROM HIGHER ALGEBRAIC K-THEORY TO ANY OTHER SUITABLE COHOMOLOGY THEORY. ALSO, BEILINSON STATED A GENERALIZED HODGE CONJECTURE. THIS BOOK PROVIDES AN INTRODUCTION TO AND A SURVEY OF BEILINSON'S CONJECTURES AND AN INTRODUCTION TO JANNSEN'S WORK WITH RESPECT TO THE HODGE AND TATE CONJECTURES. IT ADDRESSES MATHEMATICIANS WITH SOME KNOWLEDGE OF ALGEBRAIC NUMBER THEORY, ELLIPTIC CURVES AND ALGEBRAIC K-THEORY.

CONJECTURES IN ARITHMETIC ALGEBRAIC GEOMETRY 2013-06-29 THE DYNAMICAL MORDELL-LANG CONJECTURE IS AN ANALOGUE OF THE CLASSICAL MORDELL-LANG CONJECTURE IN THE CONTEXT OF ARITHMETIC DYNAMICS. IT PREDICTS THE BEHAVIOR OF THE ORBIT OF A POINT x UNDER THE ACTION OF AN ENDOMORPHISM f OF A QUASIPROJECTIVE COMPLEX VARIETY X . MORE PRECISELY, IT CLAIMS THAT FOR ANY POINT x IN X AND ANY SUBVARIETY V OF X , THE SET OF INDICES n SUCH THAT THE n TH ITERATE OF x UNDER f LIES IN V IS A FINITE UNION OF ARITHMETIC PROGRESSIONS. IN THIS BOOK, THE AUTHORS PRESENT ALL KNOWN RESULTS ABOUT THE DYNAMICAL MORDELL-LANG CONJECTURE, FOCUSING MAINLY ON A p -ADIC APPROACH WHICH PROVIDES A PARAMETRIZATION OF THE ORBIT OF A POINT UNDER AN ENDOMORPHISM OF A VARIETY.

THE DYNAMICAL MORDELL-LANG CONJECTURE 2016-04-20 A d -REGULAR GRAPH HAS LARGEST OR FIRST ADJACENCY MATRIX EIGENVALUE $\lambda_1(d)$. CONSIDER FOR AN EVEN $d \geq 4$ A RANDOM d -REGULAR GRAPH MODEL FORMED FROM d UNIFORM INDEPENDENT PERMUTATIONS ON $1 \dots n$. THE AUTHOR SHOWS THAT FOR ANY $\epsilon > 0$, ALL EIGENVALUES ASIDE FROM $\lambda_1(d)$ ARE BOUNDED BY $2\sqrt{d} + \epsilon$ WITH PROBABILITY $1 - o(n^{-\tau})$ WHERE $\tau \geq \frac{1}{2} - \epsilon$. HE ALSO SHOWS THAT THIS PROBABILITY IS AT MOST $1 - c n^{-\tau}$ FOR A CONSTANT c AND A τ THAT IS EITHER τ OR $\tau + \epsilon$ MORE OFTEN τ THAN $\tau + \epsilon$. HE PROVES RELATED THEOREMS FOR OTHER MODELS OF RANDOM GRAPHS INCLUDING MODELS WITH d ODD.

A PROOF OF ALON'S SECOND EIGENVALUE CONJECTURE AND RELATED PROBLEMS 2008 THE SMITH CONJECTURE

THE SMITH CONJECTURE 1984-05-01 THE AUTHOR DEVELOPS THE THEORY OF HOD-MICE BELOW $\text{ADR}(\Theta)$ IS REGULAR. HE USES THIS THEORY TO SHOW THAT HOD OF THE MINIMAL MODEL OF $\text{ADR}(\Theta)$ IS REGULAR. SATISFIES GCH. MOREOVER, HE SHOWS THAT THE MOUSE SET CONJECTURE IS TRUE IN THE MINIMAL MODEL OF $\text{ADR}(\Theta)$ IS REGULAR.

HOD-MICE AND THE MOUSE SET CONJECTURE 2015-06-26 THIS BOOK GIVES A COMPLETE PROOF OF THE GEOMETRIZATION CONJECTURE WHICH DESCRIBES ALL COMPACT 3-MANIFOLDS IN TERMS OF GEOMETRIC PIECES. I.E. 3-MANIFOLDS WITH LOCALLY HOMOGENEOUS METRICS OF FINITE VOLUME. THE METHOD IS TO UNDERSTAND THE LIMITS AS TIME GOES TO INFINITY OF RICCI FLOW WITH SURGERY. THE FIRST HALF OF THE BOOK IS DEVOTED TO SHOWING THAT THESE LIMITS DIVIDE NATURALLY ALONG INCOMPRESSIBLE TORI INTO PIECES ON WHICH THE METRIC IS CONVERGING SMOOTHLY TO HYPERBOLIC METRICS AND PIECES THAT ARE LOCALLY MORE AND MORE VOLUME COLLAPSED. THE SECOND HALF OF THE BOOK IS DEVOTED TO SHOWING THAT THE LATTER PIECES ARE THEMSELVES GEOMETRIC. THIS IS ESTABLISHED BY SHOWING THAT THE GROMOV-HAUSDORFF LIMITS OF SEQUENCES OF MORE AND MORE LOCALLY VOLUME COLLAPSED 3-MANIFOLDS ARE ALEXANDROV SPACES OF DIMENSION AT MOST 2 AND THEN CLASSIFYING THESE ALEXANDROV SPACES. IN THE COURSE OF PROVING THE GEOMETRIZATION CONJECTURE, THE AUTHORS PROVIDE AN OVERVIEW OF THE MAIN RESULTS ABOUT RICCI FLOWS WITH SURGERY ON 3-DIMENSIONAL MANIFOLDS. INTRODUCING THE READER TO THIS DIFFICULT MATERIAL, THE BOOK ALSO INCLUDES AN ELEMENTARY INTRODUCTION TO GROMOV-HAUSDORFF LIMITS AND TO THE BASICS OF THE THEORY OF ALEXANDROV SPACES. IN ADDITION, A COMPLETE PICTURE OF THE LOCAL STRUCTURE OF ALEXANDROV SURFACES IS DEVELOPED. ALL OF THESE IMPORTANT TOPICS ARE OF INDEPENDENT INTEREST. TITLES IN THIS SERIES ARE CO-PUBLISHED WITH THE CLAY MATHEMATICS INSTITUTE, CAMBRIDGE, MA.

THE GEOMETRIZATION CONJECTURE 2014-05-21 IN THE ART OF CAUSAL CONJECTURE, GLENN SHAFER LAYS OUT A NEW MATHEMATICAL AND PHILOSOPHICAL FOUNDATION FOR PROBABILITY AND USES IT TO EXPLAIN CONCEPTS OF CAUSALITY USED IN STATISTICS, ARTIFICIAL INTELLIGENCE AND PHILOSOPHY. THE VARIOUS DISCIPLINES THAT USE CAUSAL REASONING DIFFER IN THE RELATIVE WEIGHT THEY PUT ON SECURITY AND PRECISION OF KNOWLEDGE AS OPPOSED TO TIMELINESS OF ACTION. THE NATURAL AND SOCIAL SCIENCES SEEK HIGH LEVELS OF CERTAINTY IN THE IDENTIFICATION OF CAUSES AND HIGH LEVELS OF PRECISION IN THE MEASUREMENT OF THEIR EFFECTS. THE PRACTICAL SCIENCES, MEDICINE, BUSINESS, ENGINEERING AND ARTIFICIAL INTELLIGENCE MUST ACT ON CAUSAL CONJECTURES BASED ON MORE LIMITED KNOWLEDGE. SHAFER'S UNDERSTANDING OF CAUSALITY CONTRIBUTES TO BOTH OF THESE USES OF CAUSAL REASONING. HIS LANGUAGE FOR CAUSAL EXPLANATION CAN GUIDE STATISTICAL INVESTIGATION IN THE NATURAL AND SOCIAL SCIENCES AND IT CAN ALSO BE USED TO FORMULATE ASSUMPTIONS OF CAUSAL UNIFORMITY NEEDED FOR DECISION MAKING IN THE PRACTICAL SCIENCES. CAUSAL IDEAS PERMEATE THE USE OF PROBABILITY AND STATISTICS IN ALL BRANCHES OF INDUSTRY, COMMERCE, GOVERNMENT AND SCIENCE. THE ART OF CAUSAL CONJECTURE SHOWS THAT CAUSAL IDEAS CAN BE EQUALLY IMPORTANT IN THEORY. IT DOES NOT CHALLENGE THE MAXIM THAT CAUSATION CANNOT BE PROVEN FROM STATISTICS ALONE BUT BY BRINGING CAUSAL IDEAS INTO THE FOUNDATIONS OF PROBABILITY, IT ALLOWS CAUSAL CONJECTURES TO BE MORE CLEARLY QUANTIFIED, DEBATED AND CONFRONTED BY STATISTICAL EVIDENCE.

THE ART OF CAUSAL CONJECTURE 1996 RELYING ON THE KNOWN TWO-TERM QUASICLASSICAL ASYMPTOTIC FORMULA FOR THE TRACE OF THE FUNCTION $f(A)$ OF A WIENER-HOPF TYPE OPERATOR A IN DIMENSION ONE, IN 1982 H. WIDOM CONJECTURED A MULTI-DIMENSIONAL GENERALIZATION OF THAT FORMULA FOR A PSEUDO-DIFFERENTIAL OPERATOR A WITH A SYMBOL \mathbf{x} HAVING JUMP DISCONTINUITIES IN BOTH VARIABLES. IN 1990 HE PROVED THE CONJECTURE FOR THE SPECIAL CASE WHEN THE JUMP IN ANY OF THE TWO VARIABLES OCCURS ON A HYPERPLANE. THE PRESENT PAPER PROVIDES A PROOF OF WIDOM'S CONJECTURE UNDER THE ASSUMPTION THAT THE SYMBOL HAS JUMPS IN BOTH VARIABLES ON ARBITRARY SMOOTH BOUNDED SURFACES.

PSEUDO-DIFFERENTIAL OPERATORS WITH DISCONTINUOUS SYMBOLS: WIDOM'S CONJECTURE 2013-02-26 FOR OVER 100 YEARS THE POINCARÉ CONJECTURE WHICH PROPOSES A TOPOLOGICAL CHARACTERIZATION OF THE 3 SPHERE HAS BEEN THE CENTRAL QUESTION IN TOPOLOGY SINCE ITS FORMULATION IT HAS BEEN REPEATEDLY ATTACKED WITHOUT SUCCESS USING VARIOUS TOPOLOGICAL METHODS ITS IMPORTANCE AND DIFFICULTY WERE HIGHLIGHTED WHEN IT WAS CHOSEN AS ONE OF THE CLAY MATHEMATICS INSTITUTE'S SEVEN MILLENNIUM PRIZE PROBLEMS IN 2002 AND 2003 GRIGORY PERELMAN POSTED THREE PREPRINTS SHOWING HOW TO USE GEOMETRIC ARGUMENTS IN PARTICULAR THE RICCI FLOW AS INTRODUCED AND STUDIED BY HAMILTON TO ESTABLISH THE POINCARÉ CONJECTURE IN THE AFFIRMATIVE THIS BOOK PROVIDES FULL DETAILS OF A COMPLETE PROOF OF THE POINCARÉ CONJECTURE FOLLOWING PERELMAN'S THREE PREPRINTS AFTER A LENGTHY INTRODUCTION THAT OUTLINES THE ENTIRE ARGUMENT THE BOOK IS DIVIDED INTO FOUR PARTS THE FIRST PART REVIEWS NECESSARY RESULTS FROM RIEMANNIAN GEOMETRY AND RICCI FLOW INCLUDING MUCH OF HAMILTON'S WORK THE SECOND PART STARTS WITH PERELMAN'S LENGTH FUNCTION WHICH IS USED TO ESTABLISH CRUCIAL NON COLLAPSING THEOREMS THEN IT DISCUSSES THE CLASSIFICATION OF NON COLLAPSED ANCIENT SOLUTIONS TO THE RICCI FLOW EQUATION THE THIRD PART CONCERNS THE EXISTENCE OF RICCI FLOW WITH SURGERY FOR ALL POSITIVE TIME AND AN ANALYSIS OF THE TOPOLOGICAL AND GEOMETRIC CHANGES INTRODUCED BY SURGERY THE LAST PART FOLLOWS PERELMAN'S THIRD PREPRINT TO PROVE THAT WHEN THE INITIAL RIEMANNIAN 3 MANIFOLD HAS FINITE FUNDAMENTAL GROUP RICCI FLOW WITH SURGERY BECOMES EXTINCT AFTER FINITE TIME THE PROOFS OF THE POINCARÉ CONJECTURE AND THE CLOSELY RELATED 3 DIMENSIONAL SPHERICAL SPACE FORM CONJECTURE THE EXISTENCE OF RICCI FLOW WITH SURGERY HAS APPLICATION TO 3 MANIFOLDS FAR BEYOND THE POINCARÉ CONJECTURE IT FORMS THE HEART OF THE PROOF VIA RICCI FLOW OF THURSTON'S GEOMETRIZATION CONJECTURE THURSTON'S GEOMETRIZATION CONJECTURE WHICH CLASSIFIES ALL COMPACT 3 MANIFOLDS WILL BE THE SUBJECT OF A FOLLOW UP ARTICLE THE ORGANIZATION OF THE MATERIAL IN THIS BOOK DIFFERS FROM THAT GIVEN BY PERELMAN FROM THE BEGINNING THE AUTHORS PRESENT ALL ANALYTIC AND GEOMETRIC ARGUMENTS IN THE CONTEXT OF RICCI FLOW WITH SURGERY IN ADDITION THE FOURTH PART IS A MUCH EXPANDED VERSION OF PERELMAN'S THIRD PREPRINT IT GIVES THE FIRST COMPLETE AND DETAILED PROOF OF THE FINITE TIME EXTINCTION THEOREM WITH THE LARGE AMOUNT OF BACKGROUND MATERIAL THAT IS PRESENTED AND THE DETAILED VERSIONS OF THE CENTRAL ARGUMENTS THIS BOOK IS SUITABLE FOR ALL MATHEMATICIANS FROM ADVANCED GRADUATE STUDENTS TO SPECIALISTS IN GEOMETRY AND TOPOLOGY CLAY MATHEMATICS INSTITUTE MONOGRAPH SERIES THE CLAY MATHEMATICS INSTITUTE MONOGRAPH SERIES PUBLISHES SELECTED EXPOSITIONS OF RECENT DEVELOPMENTS BOTH IN EMERGING AREAS AND IN OLDER SUBJECTS TRANSFORMED BY NEW INSIGHTS OR UNIFYING IDEAS INFORMATION FOR OUR DISTRIBUTORS TITLES IN THIS SERIES ARE CO PUBLISHED WITH THE CLAY MATHEMATICS INSTITUTE CAMBRIDGE MA

RICCI FLOW AND THE POINCARÉ CONJECTURE 2007 THESE LECTURE NOTES CONTAIN A GUIDED TOUR TO THE NOVIKOV CONJECTURE AND RELATED CONJECTURES DUE TO BAUM CONNES BOREL AND FARRELL JONES THEY BEGIN WITH BASICS ABOUT HIGHER SIGNATURES WHITEHEAD TORSION AND THE 5 COBORDISM THEOREM THEN AN INTRODUCTION TO SURGERY THEORY AND A VERSION OF THE ASSEMBLY MAP IS PRESENTED USING THE SOLUTION OF THE NOVIKOV CONJECTURE FOR SPECIAL GROUPS SOME APPLICATIONS TO THE CLASSIFICATION OF LOW DIMENSIONAL MANIFOLDS ARE GIVEN

THE NOVIKOV CONJECTURE 2005-12-05 THIS FIRST EDITION OF THIS BOOK QUICKLY BECAME AN ESTABLISHED TEXT IN THIS FAST DEVELOPING BRANCH OF MATHEMATICS THIS SECOND EDITION HAS BEEN SIGNIFICANTLY REVISED AND EXPANDED IT INCLUDES A SECTION ON NEW DEVELOPMENTS AND AN EXPANDED DISCUSSION OF TAUBES AND DONALDSON'S RECENT RESULTS

INTRODUCTION TO SYMPLECTIC TOPOLOGY 1998 THE HISTORY FORMULAS AND MOST FAMOUS PUZZLES OF GRAPH THEORY GRAPH THEORY GOES BACK SEVERAL CENTURIES AND REVOLVES AROUND THE STUDY OF GRAPHS MATHEMATICAL STRUCTURES SHOWING RELATIONS BETWEEN OBJECTS WITH APPLICATIONS IN BIOLOGY COMPUTER SCIENCE TRANSPORTATION SCIENCE AND OTHER AREAS GRAPH THEORY ENCOMPASSES SOME OF THE MOST BEAUTIFUL FORMULAS IN MATHEMATICS AND SOME OF ITS MOST FAMOUS PROBLEMS THE FASCINATING WORLD OF GRAPH THEORY EXPLORES THE QUESTIONS AND PUZZLES THAT HAVE BEEN STUDIED AND OFTEN SOLVED THROUGH GRAPH THEORY THIS BOOK LOOKS AT GRAPH THEORY'S DEVELOPMENT AND THE VIBRANT INDIVIDUALS RESPONSIBLE FOR THE FIELD'S GROWTH INTRODUCING FUNDAMENTAL CONCEPTS THE AUTHORS EXPLORE A DIVERSE PLETHORA OF CLASSIC PROBLEMS SUCH AS THE LIGHTS OUT PUZZLE AND EACH CHAPTER CONTAINS MATH EXERCISES FOR READERS TO SAVOR AN EYE OPENING JOURNEY INTO THE WORLD OF GRAPHS THE FASCINATING WORLD OF GRAPH THEORY OFFERS EXCITING PROBLEM SOLVING POSSIBILITIES FOR MATHEMATICS AND BEYOND

THE FASCINATING WORLD OF GRAPH THEORY 2017-06-06 LEARNED IGNORANCE THE RECOGNITION THAT GOD IS BEYOND US AND OUR KNOWING CAPACITIES IS THE THEOLOGICAL CONCEPT FOR WHICH NICHOLAS OF CUSA IS MOST FAMOUS DESPITE GOD'S APPARENT ABSENCE NICHOLAS OFFERS ORIGINAL WAYS TO THINK ABOUT GOD THAT WOULD UNITE HIS PRESENCE WITH HIS ABSENCE HE CALLED THESE PROPOSALS CONJECTURES CONJECTURAE CONJECTURE AND CONJECTURING ARE CENTRAL TO THE METHODOLOGY OF NICHOLAS'S PHILOSOPHICAL THEOLOGY AND TO HIS THINKING ABOUT HUMAN KNOWLEDGE BY USING CONCRETE EXAMPLES FROM THE EVERYDAY LIFE OF HIS TIMES AS SYMBOLIC IMAGERY NICHOLAS MAKES WHAT WE SAY ABOUT GOD IMAGINATIVELY AVAILABLE AND THEORETICALLY PLAUSIBLE HE CALLED SUCH CONJECTURAL SYMBOLS AENIGMATA SYMBOLIC OR ENIGMATIC CONJECTURES BECAUSE THEY PARTIALLY CLARIFY AND LIKEWISE POINT TO AN EXACT TRUTH THAT IS BEYOND US NOVEL AND IMAGINATIVE NICHOLAS'S CONJECTURAL EXAMPLES BREAK WITH THE TRADITIONAL MEDIEVAL ARISTOTELIAN EXAMPLES AND PROVIDE FURTHER EVIDENCE OF HIS ROLE AS A FIGURE BRIDGING MEDIEVAL AND RENAISSANCE THOUGHT FOLLOWING HIS EARLIER BOOK *READING CUSANUS* THE CATHOLIC UNIVERSITY OF AMERICA PRESS 2003 CLYDE LEE MILLER HERE EXAMINES AND COMMENTS ON THE MEANING OF CONJECTURE IN NICHOLAS OF CUSA THE ART OF CONJECTURE NICHOLAS OF CUSA ON KNOWLEDGE EXPLORES WHAT NICHOLAS MEANT BY CONJECTURE AND ITS IMPORT AS DEMONSTRATED IN HIS TREATISES AND SERMONS BEGINNING WITH NICHOLAS ON CONJECTURES MILLER ANALYZES A SERIES OF CONJECTURAL SYMBOLS AND PROPOSALS ACROSS NICHOLAS'S LESS FREQUENTLY DISCUSSED TEXTS AND RECENTLY PUBLISHED SERMONS THIS EARLY RENAISSANCE THINKER OFFERS AN ORIGINAL AND GROUND BREAKING WAY OF FRAMING SPECULATION IN PHILOSOPHICAL THEOLOGY AND MORE GENERALLY IN PHILOSOPHY ITSELF

THE ART OF CONJECTURE 2021-03-12 HOW DID WE MAKE RELIABLE PREDICTIONS BEFORE PASCAL AND FERMAT'S DISCOVERY OF THE MATHEMATICS OF PROBABILITY IN 1654 WHAT METHODS IN LAW SCIENCE COMMERCE PHILOSOPHY AND LOGIC HELPED US TO GET AT THE TRUTH IN CASES WHERE CERTAINTY WAS NOT ATTAINABLE IN THE SCIENCE OF CONJECTURE JAMES FRANKLIN EXAMINES HOW JUDGES WITCH INQUISITORS AND JURIES EVALUATED EVIDENCE HOW SCIENTISTS WEIGHED REASONS FOR AND AGAINST SCIENTIFIC THEORIES AND HOW MERCHANTS COUNTED SHIPWRECKS TO DETERMINE INSURANCE RATES THE SCIENCE OF CONJECTURE PROVIDES A HISTORY OF RATIONAL METHODS OF DEALING WITH UNCERTAINTY AND EXPLORES THE COMING TO CONSCIOUSNESS OF THE HUMAN UNDERSTANDING OF RISK

THE SCIENCE OF CONJECTURE 2015-08-01 POINT COUNTING RESULTS FOR SETS IN REAL EUCLIDEAN SPACE HAVE FOUND REMARKABLE APPLICATIONS TO DIOPHANTINE GEOMETRY ENABLING SIGNIFICANT PROGRESS ON THE ANDRÉ OORT AND ZILBER PINK CONJECTURES THE

RESULTS COMBINE IDEAS CLOSE TO TRANSCENDENCE THEORY WITH THE STRONG TAMENESS PROPERTIES OF SETS THAT ARE DEFINABLE IN AN O MINIMAL STRUCTURE AND THUS THE MATERIAL TREATED CONNECTS IDEAS IN MODEL THEORY TRANSCENDENCE THEORY AND ARITHMETIC THIS BOOK DESCRIBES THE COUNTING RESULTS AND THEIR APPLICATIONS ALONG WITH THEIR MODEL THEORETIC AND TRANSCENDENCE CONNECTIONS CORE RESULTS ARE PRESENTED IN DETAIL TO DEMONSTRATE THE FLEXIBILITY OF THE METHOD WHILE WIDER DEVELOPMENTS ARE DESCRIBED IN ORDER TO ILLUSTRATE THE BREADTH OF THE DIOPHANTINE CONJECTURES AND TO HIGHLIGHT KEY ARITHMETICAL INGREDIENTS THE UNDERLYING IDEAS ARE ELEMENTARY AND MOST OF THE BOOK CAN BE READ WITH ONLY A BASIC FAMILIARITY WITH NUMBER THEORY AND COMPLEX ALGEBRAIC GEOMETRY IT SERVES AS AN INTRODUCTION FOR POSTGRADUATE STUDENTS AND RESEARCHERS TO THE MAIN IDEAS RESULTS PROBLEMS AND THEMES OF CURRENT RESEARCH IN THIS AREA

POINT-COUNTING AND THE ZILBER-PINK CONJECTURE 2022-06-09 COMMISSIONS OF EXPERTS REGULARLY MEET TO REPLY TO QUESTIONS SUCH AS WHAT WILL BE THE POPULATION OF THE COUNTRY OR EVEN OF OUR PLANET IN TEN FIFTEEN OR TWENTY FIVE YEARS IN WHAT PROPORTION WILL PRODUCTION HAVE INCREASED WHAT MODIFICATIONS WILL ITS COMPOSITION AND UTILIZATIONS HAVE UNDERGONE THE ATTRACTION OF EFFORTS TO FORECAST THE FUTURE CONTINUES THAT IS A FACT HOW DOES IT PROCEED THAT IS A PROBLEM ONE ON WHICH DE JOUVENEL FOCUSES ON IN THIS BOOK THE ART OF CONJECTURE CLEARLY EXPLAINS WHAT THE STUDY OF THE FUTURE CAN MEAN DE JOUVENEL EMPHASIZES THE LOGICAL AND POLITICAL PROBLEMS OF FORECASTING AND DISCUSSES METHODS IN ECONOMICS SOCIOLOGY AND POLITICAL SCIENCE BY WHICH THE FUTURE CAN BE STUDIED MORE IMPORTANTLY HE DISCUSSES THE FALLACIES TO WHICH THE STUDY OF THE FUTURE IS PECULIARLY LIKELY TO GIVE RISE THE AUTHOR ARGUES THAT IT IS NATURAL AND NECESSARY FOR THE POPULATION TO HAVE VISIONS OF THE FUTURE WITHOUT THIS HE STATES WE WOULD ONLY BE ABLE TO SET ONE OPINION OF THE FUTURE AGAINST ANOTHER IF THE ORIGINS AND MEANINGS OF THESE PREDICTIONS REMAINED OBSCURE ONLY THE EVENT COULD DECIDE AMONG THE OPINIONS IF ANY MAN CAN BE SAID TO HAVE CREATED THE SERIOUS STUDY OF THE FUTURE IN OUR TIME IT IS BERTRAND DE JOUVENEL FUTURIBLES A PERIODICAL HE CREATED CONTINUES TO REPRESENT A MAJOR TURNING POINT IN CONTEMPORARY SOCIAL SCIENCE JOUVENEL AIMED TO SHOW HOW THE ART OF CONJECTURE COULD INFORM PRUDENTIAL JUDGMENT AND ALLOW CITIZENS AND STATESMEN TO DETECT TROUBLES BEFORE THEY ARISE

THE ART OF CONJECTURE 2017-09-29 THIS BOOK PROVIDES A SELF CONTAINED PROOF OF THE MORDELL CONJECTURE FALTINGS S THEOREM AND A CONCISE INTRODUCTION TO DIOPHANTINE GEOMETRY

THE MORDELL CONJECTURE 2022-02-03 THIS BOOK IS ABOUT ONE OF THE BEAUTIFUL TOPICS IN MATHEMATICS IT DESCRIBES AN ON GOING RESEARCH ON BOUNDED ANALYTIC FUNCTIONS WHICH ARE DEFINED ON THE UNIT DISC THIS IS A VERY ACTIVE TOPIC THAT BELONGS TO THE THEORY OF COMPLEX ANALYSIS IN A SINGLE COMPLEX VARIABLE COMPLEX ANALYSIS IS ONE OF THE CLASSICAL CHAPTERS IN MATHEMATICS IT CONTAINS THE ANALYTIC THEORY OF FUNCTIONS THE GEOMETRIC FUNCTION THEORY AMONG OTHER THEORETICAL AREAS AS WELL AS MANY APPLICATIONS SOME APPLICATIONS ORIGINATE IN OTHER FIELDS OF MATHEMATICS GEOMETRY TOPOLOGY ARITHMETIC AND NUMBER THEORY IN GENERAL ALGEBRA ETC OTHER APPLICATIONS ORIGINATE IN OTHER SCIENTIFIC AND ENGINEERING DISCIPLINES PHYSICS DYNAMICAL SYSTEMS ELECTRICAL ENGINEERING ETC THE BOOK INCLUDES MUCH MORE THAN JUST A REVIEW ON THE KRZYZ CONJECTURE IT INCLUDES TOPICS ON INNER FUNCTIONS WITHIN THE CONTEXT OF PROBLEMS THAT ARE DIFFERENT FROM THE KRZYZ CONJECTURE AS WELL AS OTHER TOPICS ON GENERAL BOUNDED ANALYTIC FUNCTIONS PROGRESS IN MATHEMATICAL RESEARCH IS FREQUENTLY FUELLED BY EFFORTS TO SOLVE OPEN PROBLEMS THE BOOK ALSO INCLUDES A FEW IMPORTANT OPEN PROBLEMS AND SOME PARTIAL SOLUTIONS OF THESE

KRZYZ CONJECTURE, THE: THEORY AND METHODS 2021-03-17 WHAT IS THE RELATIONSHIP BETWEEN THE SOCIAL SCIENCES AND THE NATURAL SCIENCES WHERE DO TODAY S DOMINANT APPROACHES TO DOING SOCIAL SCIENCE COME FROM WHAT ARE THE MAIN FISSURES AND DEBATES IN CONTEMPORARY SOCIAL SCIENTIFIC THOUGHT HOW ARE WE TO MAKE SENSE OF SEEMINGLY CONTRASTING APPROACHES TO HOW SOCIAL SCIENTISTS FIND OUT ABOUT THE WORLD AND JUSTIFY THEIR CLAIMS TO HAVE KNOWLEDGE OF IT IN THIS EXCITING HANDBOOK IAN JARVIE AND JES S ZAMORA BONILLA HAVE PUT TOGETHER A WIDE RANGING AND AUTHORITATIVE OVERVIEW OF THE MAIN PHILOSOPHICAL CURRENTS AND TRADITIONS AT WORK IN THE SOCIAL SCIENCES TODAY STARTING WITH THE HISTORY OF SOCIAL SCIENTIFIC THOUGHT THIS HANDBOOK SETS OUT TO EXPLORE THAT CORE FUNDAMENTALS OF SOCIAL SCIENCE PRACTICE FROM ISSUES OF ONTOLOGY AND EPISTEMOLOGY TO ISSUES OF PRACTICAL METHOD ALONG THE WAY IT INVESTIGATES SUCH NOTIONS AS PARADIGM EMPIRICISM POSTMODERNISM NATURALISM LANGUAGE AGENCY POWER CULTURE AND CAUSALITY BRINGING TOGETHER IN ONE VOLUME LEADING AUTHORITIES IN THE FIELD FROM AROUND THE WORLD THIS BOOK WILL BE A MUST HAVE FOR ANY SERIOUS SCHOLAR OR STUDENT OF THE SOCIAL SCIENCES

THE SAGE HANDBOOK OF THE PHILOSOPHY OF SOCIAL SCIENCES 2011-02-17 IN THE PRESENT WORK THE AUTHOR GENERALIZES THE CONSTRUCTION OF MONOPOLE FLOER HOMOLOGY DUE TO KRONHEIMER AND MROWKA TO THE CASE OF A GRADIENT FLOW WITH MORSE BOTT SINGULARITIES FOCUSING THEN ON THE SPECIAL CASE OF A THREE MANIFOLD EQUIPPED WITH A STRUCTURE WHICH IS ISOMORPHIC TO ITS CONJUGATE THE AUTHOR DEFINES THE COUNTERPART IN THIS CONTEXT OF MANOLESCU S RECENT π_2 EQUIVARIANT SEIBERG WITTEN FLOER HOMOLOGY IN PARTICULAR THE AUTHOR PROVIDES AN ALTERNATIVE APPROACH TO HIS DISPROOF OF THE CELEBRATED TRIANGULATION CONJECTURE

A MORSE-BOTT APPROACH TO MONOPOLE FLOER HOMOLOGY AND THE TRIANGULATION CONJECTURE 2018-10-03 THE POINCAR CONJECTURE TELLS THE STORY BEHIND ONE OF THE WORLD S MOST CONFOUNDING MATHEMATICAL THEORIES FORMULATED IN 1904 BY HENRI POINCAR HIS CONJECTURE PROMISED TO DESCRIBE THE VERY SHAPE OF THE UNIVERSE BUT REMAINED UNPROVED UNTIL A HUGE PRIZE WAS OFFERED FOR ITS SOLUTION IN 2000 SIX YEARS LATER AN ECCENTRIC RUSSIAN MATHEMATICIAN HAD THE ANSWER HERE DONAL O SHEA EXPLAINS THE MATHS BEHIND THE CONJECTURE AND ITS PROOF AND ILLUMINATES THE CURIOUS PERSONALITIES SURROUNDING THIS PERPLEXING CONUNDRUM ALONG THE WAY TAKING IN A GRAND SWEEP OF SCIENTIFIC HISTORY FROM THE ANCIENT GREEKS TO CHRISTOPHER COLUMBUS THIS IS AN ENTHRALLING TALE OF HUMAN ENDEAVOUR INTELLECTUAL BRILLIANCE AND THE THRILL OF DISCOVERY

THE POINCAR CONJECTURE 2008-10-30 THE VOLUME CONJECTURE STATES THAT A CERTAIN LIMIT OF THE COLORED JONES POLYNOMIAL OF A KNOT IN THE THREE DIMENSIONAL SPHERE WOULD GIVE THE VOLUME OF THE KNOT COMPLEMENT HERE THE COLORED JONES POLYNOMIAL IS A GENERALIZATION OF THE CELEBRATED JONES POLYNOMIAL AND IS DEFINED BY USING A SO CALLED R MATRIX THAT IS ASSOCIATED WITH THE N DIMENSIONAL REPRESENTATION OF THE LIE ALGEBRA $sl_2(\mathbb{C})$ THE VOLUME CONJECTURE WAS FIRST STATED BY R KASHAEV IN TERMS OF HIS OWN INVARIANT DEFINED BY USING THE QUANTUM DILOGARITHM LATER H MURAKAMI AND J MURAKAMI PROVED THAT KASHAEV S INVARIANT IS NOTHING BUT THE N DIMENSIONAL COLORED JONES POLYNOMIAL EVALUATED AT THE NTH ROOT OF UNITY THEN THE VOLUME CONJECTURE TURNS OUT TO BE A CONJECTURE THAT RELATES AN ALGEBRAIC OBJECT THE COLORED JONES POLYNOMIAL WITH A GEOMETRIC OBJECT THE VOLUME IN THIS BOOK WE START WITH THE DEFINITION OF THE COLORED JONES POLYNOMIAL BY USING BRAID PRESENTATIONS OF KNOTS THEN

WE STATE THE VOLUME CONJECTURE AND GIVE A VERY ELEMENTARY PROOF OF THE CONJECTURE FOR THE FIGURE EIGHT KNOT FOLLOWING T EKHOLM WE THEN GIVE A ROUGH IDEA OF THE PROOF THAT IS WE SHOW WHY WE THINK THE CONJECTURE IS TRUE AT LEAST IN THE CASE OF HYPERBOLIC KNOTS BY SHOWING HOW THE SUMMATION FORMULA FOR THE COLORED JONES POLYNOMIAL LOOKS LIKE THE HYPERBOLICITY EQUATIONS OF THE KNOT COMPLEMENT WE ALSO DESCRIBE A GENERALIZATION OF THE VOLUME CONJECTURE THAT CORRESPONDS TO A DEFORMATION OF THE COMPLETE HYPERBOLIC STRUCTURE OF A KNOT COMPLEMENT THIS GENERALIZATION WOULD RELATE THE COLORED JONES POLYNOMIAL OF A KNOT TO THE VOLUME AND THE CHERN SIMONS INVARIANT OF A CERTAIN REPRESENTATION OF THE FUNDAMENTAL GROUP OF THE KNOT COMPLEMENT TO THE LIE GROUP $SL(2, \mathbb{C})$ WE FINISH BY MENTIONING FURTHER GENERALIZATIONS OF THE VOLUME CONJECTURE

VOLUME CONJECTURE FOR KNOTS 2018-08-15 PRESENTS CONTEMPORARY CHARACTER THEORY OF FINITE GROUPS FROM THE BASICS TO THE STATE OF THE ART WITH NEW REFINED PROOFS

THE ART OF CONJECTURE 2018-04-26 REALISM AND THE AIM OF SCIENCE IS ONE OF THE THREE VOLUMES OF KARL POPPER S POSTSCRIPT TO THE LOGIC OF SCIENTIFIC DISCOVERY THE POSTSCRIPT IS THE CULMINATION OF POPPER S WORK IN THE PHILOSOPHY OF PHYSICS AND A NEW FAMOUS ATTACK ON SUBJECTIVIST APPROACHES TO PHILOSOPHY OF SCIENCE REALISM AND THE AIM OF SCIENCE IS THE FIRST VOLUME OF THE POSTSCRIPT POPPER HERE FORMULATES AND EXPLAINS HIS NON JUSTIFICATIONIST THEORY OF KNOWLEDGE SCIENCE AIMS AT TRUE EXPLANATORY THEORIES YET IT CAN NEVER PROVE OR JUSTIFY ANY THEORY TO BE TRUE NOT EVEN IF IS A TRUE THEORY SCIENCE MUST CONTINUE TO QUESTION AND CRITICISE ALL ITS THEORIES EVEN THOSE THAT HAPPEN TO BE TRUE REALISM AND THE AIM OF SCIENCE PRESENTS POPPER S MATURE STATEMENT ON SCIENTIFIC KNOWLEDGE AND OFFERS IMPORTANT INSIGHTS INTO HIS THINKING ON PROBLEMS OF METHOD WITHIN SCIENCE

CHARACTER THEORY AND THE MCKAY CONJECTURE 1992 IN THE LAST FIVE YEARS THERE HAS BEEN VERY SIGNIFICANT PROGRESS IN THE DEVELOPMENT OF TRANSCENDENCE THEORY A NEW APPROACH TO THE ARITHMETIC PROPERTIES OF VALUES OF MODULAR FORMS AND THETA FUNCTIONS WAS FOUND THE SOLUTION OF THE MAHLER MANIN PROBLEM ON VALUES OF MODULAR FUNCTION J τ AND ALGEBRAIC INDEPENDENCE OF NUMBERS π AND e^π ARE MOST IMPRESSIVE RESULTS OF THIS BREAKTHROUGH THE BOOK PRESENTS THESE AND OTHER RESULTS ON ALGEBRAIC INDEPENDENCE OF NUMBERS AND FURTHER A DETAILED EXPOSITION OF METHODS CREATED IN LAST THE 25 YEARS DURING WHICH COMMUTATIVE ALGEBRA AND ALGEBRAIC GEOMETRY EXERTED STRONG CATALYTIC INFLUENCE ON THE DEVELOPMENT OF THE SUBJECT

REALISM AND THE AIM OF SCIENCE 2003-07-01 LINEAR ORDERINGS

INTRODUCTION TO ALGEBRAIC INDEPENDENCE THEORY 1982-06-01 STUDYING THE RELATIONSHIP BETWEEN THE GEOMETRY ARITHMETIC AND SPECTRA OF FRACTALS HAS BEEN A SUBJECT OF SIGNIFICANT INTEREST IN CONTEMPORARY MATHEMATICS THIS BOOK CONTRIBUTES TO THE LITERATURE ON THE SUBJECT IN SEVERAL DIFFERENT AND NEW WAYS IN PARTICULAR THE AUTHORS PROVIDE A RIGOROUS AND DETAILED STUDY OF THE SPECTRAL OPERATOR A MAP THAT SENDS THE GEOMETRY OF FRACTAL STRINGS ONTO THEIR SPECTRUM TO THAT EFFECT THEY USE AND DEVELOP METHODS FROM FRACTAL GEOMETRY FUNCTIONAL ANALYSIS COMPLEX ANALYSIS OPERATOR THEORY PARTIAL DIFFERENTIAL EQUATIONS ANALYTIC NUMBER THEORY AND MATHEMATICAL PHYSICS ORIGINALLY M L LAPIDUS AND M VAN FRANKENHUIJSEN HEURISTICALLY INTRODUCED THE SPECTRAL OPERATOR IN THEIR DEVELOPMENT OF THE THEORY OF FRACTAL STRINGS AND THEIR COMPLEX DIMENSIONS SPECIFICALLY IN THEIR REINTERPRETATION OF THE EARLIER WORK OF M L LAPIDUS AND H MAIER ON INVERSE SPECTRAL PROBLEMS FOR FRACTAL STRINGS AND THE RIEMANN HYPOTHESIS ONE OF THE MAIN THEMES OF THE BOOK IS TO PROVIDE A RIGOROUS FRAMEWORK WITHIN WHICH THE CORRESPONDING QUESTION CAN ONE HEAR THE SHAPE OF A FRACTAL STRING OR EQUIVALENTLY CAN ONE OBTAIN INFORMATION ABOUT THE GEOMETRY OF A FRACTAL STRING GIVEN ITS SPECTRUM CAN BE FURTHER REFORMULATED IN TERMS OF THE INVERTIBILITY OR THE QUASI INVERTIBILITY OF THE SPECTRAL OPERATOR THE INFINITESIMAL SHIFT OF THE REAL LINE IS FIRST PRECISELY DEFINED AS A DIFFERENTIATION OPERATOR ON A FAMILY OF SUITABLY WEIGHTED HILBERT SPACES OF FUNCTIONS ON THE REAL LINE AND INDEXED BY A DIMENSIONAL PARAMETER c THEN THE SPECTRAL OPERATOR IS DEFINED VIA THE FUNCTIONAL CALCULUS AS A FUNCTION OF THE INFINITESIMAL SHIFT IN THIS MANNER IT IS VIEWED AS A NATURAL QUANTUM ANALOG OF THE RIEMANN ZETA FUNCTION MORE PRECISELY WITHIN THIS FRAMEWORK THE SPECTRAL OPERATOR IS DEFINED AS THE COMPOSITE MAP OF THE RIEMANN ZETA FUNCTION WITH THE INFINITESIMAL SHIFT VIEWED AS AN UNBOUNDED NORMAL OPERATOR ACTING ON THE ABOVE HILBERT SPACE IT IS SHOWN THAT THE QUASI INVERTIBILITY OF THE SPECTRAL OPERATOR IS INTIMATELY CONNECTED TO THE EXISTENCE OF CRITICAL ZEROS OF THE RIEMANN ZETA FUNCTION LEADING TO A NEW SPECTRAL AND OPERATOR THEORETIC REFORMULATION OF THE RIEMANN HYPOTHESIS ACCORDINGLY THE SPECTRAL OPERATOR IS QUASI INVERTIBLE FOR ALL VALUES OF THE DIMENSIONAL PARAMETER c IN THE CRITICAL INTERVAL $(0, 1)$ OTHER THAN IN THE MIDFRACTAL CASE WHEN $c = 1/2$ IF AND ONLY IF THE RIEMANN HYPOTHESIS RH IS TRUE A RELATED BUT SEEMINGLY QUITE DIFFERENT REFORMULATION OF RH DUE TO THE SECOND AUTHOR AND REFERRED TO AS AN ASYMMETRIC CRITERION FOR RH IS ALSO DISCUSSED IN SOME DETAIL NAMELY THE SPECTRAL OPERATOR IS INVERTIBLE FOR ALL VALUES OF c IN THE LEFT CRITICAL INTERVAL $(0, 1/2)$ IF AND ONLY IF RH IS TRUE THESE SPECTRAL REFORMULATIONS OF RH ALSO LED TO THE DISCOVERY OF SEVERAL MATHEMATICAL PHASE TRANSITIONS IN THIS CONTEXT FOR THE SHAPE OF THE SPECTRUM THE INVERTIBILITY THE BOUNDEDNESS OR THE UNBOUNDEDNESS OF THE SPECTRAL OPERATOR AND OCCURRING EITHER IN THE MIDFRACTAL CASE OR IN THE MOST FRACTAL CASE WHEN THE UNDERLYING FRACTAL DIMENSION IS EQUAL TO $1/2$ OR 1 RESPECTIVELY IN PARTICULAR THE MIDFRACTAL DIMENSION $c = 1/2$ IS PLAYING THE ROLE OF A CRITICAL PARAMETER IN QUANTUM STATISTICAL PHYSICS AND THE THEORY OF PHASE TRANSITIONS AND CRITICAL PHENOMENA FURTHERMORE THE AUTHORS PROVIDE A QUANTUM ANALOG OF VORONIN S CLASSICAL THEOREM ABOUT THE UNIVERSALITY OF THE RIEMANN ZETA FUNCTION MOREOVER THEY OBTAIN AND STUDY QUANTIZED COUNTERPARTS OF THE DIRICHLET SERIES AND OF THE EULER PRODUCT FOR THE RIEMANN ZETA FUNCTION WHICH ARE SHOWN TO CONVERGE IN A SUITABLE SENSE EVEN INSIDE THE CRITICAL STRIP FOR PEDAGOGICAL REASONS MOST OF THE BOOK IS DEVOTED TO THE STUDY OF THE QUANTIZED RIEMANN ZETA FUNCTION HOWEVER THE RESULTS OBTAINED IN THIS MONOGRAPH ARE EXPECTED TO LEAD TO A QUANTIZATION OF MOST CLASSIC ARITHMETIC ZETA FUNCTIONS HENCE FURTHER NATURALLY QUANTIZING VARIOUS ASPECTS OF ANALYTIC NUMBER THEORY AND ARITHMETIC GEOMETRY THE BOOK SHOULD BE ACCESSIBLE TO EXPERTS AND NON EXPERTS ALIKE INCLUDING MATHEMATICS AND PHYSICS GRADUATE STUDENTS AND POSTDOCTORAL RESEARCHERS INTERESTED IN FRACTAL GEOMETRY NUMBER THEORY OPERATOR THEORY AND FUNCTIONAL ANALYSIS DIFFERENTIAL EQUATIONS COMPLEX ANALYSIS SPECTRAL THEORY AS WELL AS MATHEMATICAL AND THEORETICAL PHYSICS WHENEVER NECESSARY SUITABLE BACKGROUND ABOUT THE DIFFERENT SUBJECTS INVOLVED IS PROVIDED AND THE NEW WORK IS PLACED IN ITS PROPER HISTORICAL CONTEXT SEVERAL APPENDICES SUPPLEMENTING THE MAIN TEXT ARE ALSO INCLUDED

LINEAR ORDERINGS 2021-07-27 ANTI CHRIST DEFINED I FEEL THAT IT IS IMPORTANT TO UNDERSTANDING SATAN THAT WE DEFINE JUST WHAT IS MEANT BY THE WORD ANTI CHRIST THE WORD CHRIST IS OBVIOUS IT REFERS TO THE SAVIOR THE SON OF GOD THE GOD OF

CREATION THE ENGLISH WORD ANTI MEANS TO BE AGAINST OR IN OPPOSITION TO THE PROBLEM IS THAT THE WORD ANTI AS USED IN THE BIBLE IS GREEK IN ITS ORIGIN AND THEREFORE HAS A DEFINITION WITH MORE MEANING THAN THE ENGLISH WORD IN THE BIBLE CONCORDANCE ANTI CHRISTOS IS DEFINED AS FALSE CHRIST SUBSTITUTE FOR CHRIST OPPOSITE OF REVERSE NEUTRALIZING ANTAGONISTIC THEREFORE THE ANTI CHRIST IS SOMEONE OR SOMETHING THAT MAKES YOU THINK THEY ARE CHRIST THROUGH FALSE REPRESENTATION AND SUBSTITUTION THIS CAN BE ILLUSTRATED IN THE BIBLE WITH THE FOLLOWING VERSES THE PURPOSE OF THIS BOOK IS TO REVEAL GODS TRUE WORD TO ALL WHO SEEK TO KNOW GODS TRUTH

QUANTIZED NUMBER THEORY, FRACTAL STRINGS AND THE RIEMANN HYPOTHESIS: FROM SPECTRAL OPERATORS TO PHASE TRANSITIONS AND UNIVERSALITY 2014-02-18

IN HIS LONG AWAITED NEW EDITION OF PHILOSOPHY OF MATHEMATICS JAMES ROBERT BROWN TACKLES IMPORTANT NEW AS WELL AS ENDURING QUESTIONS IN THE MATHEMATICAL SCIENCES CAN PICTURES GO BEYOND BEING MERELY SUGGESTIVE AND ACTUALLY PROVE ANYTHING ARE MATHEMATICAL RESULTS CERTAIN ARE EXPERIMENTS OF ANY REAL VALUE THIS CLEAR AND ENGAGING BOOK TAKES A UNIQUE APPROACH ENCOMPASSING NON STANDARD TOPICS SUCH AS THE ROLE OF VISUAL REASONING THE IMPORTANCE OF NOTATION AND THE PLACE OF COMPUTERS IN MATHEMATICS AS WELL AS TRADITIONAL TOPICS SUCH AS FORMALISM PLATONISM AND CONSTRUCTIVISM THE COMBINATION OF TOPICS AND CLARITY OF PRESENTATION MAKE IT SUITABLE FOR BEGINNERS AND EXPERTS ALIKE THE REVISED AND UPDATED SECOND EDITION OF PHILOSOPHY OF MATHEMATICS CONTAINS MORE EXAMPLES SUGGESTIONS FOR FURTHER READING AND EXPANDED MATERIAL ON SEVERAL TOPICS INCLUDING A NOVEL APPROACH TO THE CONTINUUM HYPOTHESIS

SATAN THE ANTI-CHRIST AND THE FALSE PROPHET 2010-03-17 EXTRINSIC GEOMETRIC FLOWS ARE CHARACTERIZED BY A SUBMANIFOLD EVOLVING IN AN AMBIENT SPACE WITH VELOCITY DETERMINED BY ITS EXTRINSIC CURVATURE THE GOAL OF THIS BOOK IS TO GIVE AN EXTENSIVE INTRODUCTION TO A FEW OF THE MOST PROMINENT EXTRINSIC FLOWS NAMELY THE CURVE SHORTENING FLOW THE MEAN CURVATURE FLOW THE GAU² CURVATURE FLOW THE INVERSE MEAN CURVATURE FLOW AND FULLY NONLINEAR FLOWS OF MEAN CURVATURE AND INVERSE MEAN CURVATURE TYPE THE AUTHORS HIGHLIGHT TECHNIQUES AND BEHAVIORS THAT FREQUENTLY ARISE IN THE STUDY OF THESE AND OTHER FLOWS TO ILLUSTRATE THE BROAD APPLICABILITY OF THE TECHNIQUES DEVELOPED THEY ALSO CONSIDER GENERAL CLASSES OF FULLY NONLINEAR CURVATURE FLOWS THE BOOK IS WRITTEN AT THE LEVEL OF A GRADUATE STUDENT WHO HAS HAD A BASIC COURSE IN DIFFERENTIAL GEOMETRY AND HAS SOME FAMILIARITY WITH PARTIAL DIFFERENTIAL EQUATIONS IT IS INTENDED ALSO TO BE USEFUL AS A REFERENCE FOR SPECIALISTS IN GENERAL THE AUTHORS PROVIDE DETAILED PROOFS ALTHOUGH FOR SOME MORE SPECIALIZED RESULTS THEY MAY ONLY PRESENT THE MAIN IDEAS IN SUCH CASES THEY PROVIDE REFERENCES FOR COMPLETE PROOFS A BRIEF SURVEY OF ADDITIONAL TOPICS WITH EXTENSIVE REFERENCES CAN BE FOUND IN THE NOTES AND COMMENTARY AT THE END OF EACH CHAPTER

PHILOSOPHY OF MATHEMATICS 2020-05-14 THIS BOOK OFFERS A SURVEY OF RECENT DEVELOPMENTS IN THE ANALYSIS OF SHOCK REFLECTION DIFFRACTION A DETAILED PRESENTATION OF ORIGINAL MATHEMATICAL PROOFS OF VON NEUMANN'S CONJECTURES FOR POTENTIAL FLOW AND A COLLECTION OF RELATED RESULTS AND NEW TECHNIQUES IN THE ANALYSIS OF PARTIAL DIFFERENTIAL EQUATIONS PDES AS WELL AS A SET OF FUNDAMENTAL OPEN PROBLEMS FOR FURTHER DEVELOPMENT SHOCK WAVES ARE FUNDAMENTAL IN NATURE THEY ARE GOVERNED BY THE EULER EQUATIONS OR THEIR VARIANTS GENERALLY IN THE FORM OF NONLINEAR CONSERVATION LAWS PDES OF DIVERGENCE FORM WHEN A SHOCK HITS AN OBSTACLE SHOCK REFLECTION DIFFRACTION CONFIGURATIONS TAKE SHAPE TO UNDERSTAND THE FUNDAMENTAL ISSUES INVOLVED SUCH AS THE STRUCTURE AND TRANSITION CRITERIA OF DIFFERENT CONFIGURATION PATTERNS IT IS ESSENTIAL TO ESTABLISH THE GLOBAL EXISTENCE REGULARITY AND STRUCTURAL STABILITY OF SHOCK REFLECTION DIFFRACTION SOLUTIONS THIS INVOLVES DEALING WITH SEVERAL CORE DIFFICULTIES IN THE ANALYSIS OF NONLINEAR PDES MIXED TYPE FREE BOUNDARIES AND CORNER SINGULARITIES THAT ALSO ARISE IN FUNDAMENTAL PROBLEMS IN DIVERSE AREAS SUCH AS CONTINUUM MECHANICS DIFFERENTIAL GEOMETRY MATHEMATICAL PHYSICS AND MATERIALS SCIENCE PRESENTING RECENTLY DEVELOPED APPROACHES AND TECHNIQUES WHICH WILL BE USEFUL FOR SOLVING PROBLEMS WITH SIMILAR DIFFICULTIES THIS BOOK OPENS UP NEW RESEARCH OPPORTUNITIES

EXTRINSIC GEOMETRIC FLOWS 2018-02-27 THIS BOOK IS AN INTRODUCTION TO THE FIELD OF CONSTRAINED HAMILTONIAN SYSTEMS AND THEIR QUANTIZATION A TOPIC WHICH IS OF CENTRAL INTEREST TO THEORETICAL PHYSICISTS WHO WISH TO OBTAIN A DEEPER UNDERSTANDING OF THE QUANTIZATION OF GAUGE THEORIES SUCH AS DESCRIBING THE FUNDAMENTAL INTERACTIONS IN NATURE BEGINNING WITH THE EARLY WORK OF DIRAC THE BOOK COVERS THE MAIN DEVELOPMENTS IN THE FIELD UP TO MORE RECENT TOPICS SUCH AS THE FIELD ANTIFIELD FORMALISM OF BATALIN AND VILKOVISKY INCLUDING A SHORT DISCUSSION OF HOW GAUGE ANOMALIES MAY BE INCORPORATED INTO THIS FORMALISM ALL TOPICS ARE WELL ILLUSTRATED WITH EXAMPLES EMPHASIZING POINTS OF CENTRAL INTEREST THE BOOK SHOULD ENABLE GRADUATE STUDENTS TO FOLLOW THE LITERATURE ON THIS SUBJECT WITHOUT MUCH PROBLEMS AND TO PERFORM RESEARCH IN THIS FIELD

THE MATHEMATICS OF SHOCK REFLECTION-DIFFRACTION AND VON NEUMANN'S CONJECTURES 2010 EUG² NE CHARLES CATALAN MADE HIS FAMOUS CONJECTURE THAT 8 AND 9 ARE THE ONLY TWO CONSECUTIVE PERFECT POWERS OF NATURAL NUMBERS IN 1844 IN A LETTER TO THE EDITOR OF CRELLE'S MATHEMATICAL JOURNAL ONE HUNDRED AND FIFTY EIGHT YEARS LATER PRED A MIHAILESCU PROVED IT CATALAN'S CONJECTURE PRESENTS THIS SPECTACULAR RESULT IN A WAY THAT IS ACCESSIBLE TO THE ADVANCED UNDERGRADUATE THE AUTHOR DISSECTS BOTH MIHAILESCU'S PROOF AND THE EARLIER WORK IT MADE USE OF TAKING GREAT CARE TO SELECT STREAMLINED AND TRANSPARENT VERSIONS OF THE ARGUMENTS AND TO KEEP THE TEXT SELF CONTAINED ONLY IN THE PROOF OF THAIN'S THEOREM IS A LITTLE CLASS FIELD THEORY USED IT IS HOPED THAT THIS APPLICATION WILL MOTIVATE THE INTERESTED READER TO STUDY THE THEORY FURTHER BEAUTIFULLY CLEAR AND CONCISE THIS BOOK WILL APPEAL NOT ONLY TO SPECIALISTS IN NUMBER THEORY BUT TO ANYONE INTERESTED IN SEEING THE APPLICATION OF THE IDEAS OF ALGEBRAIC NUMBER THEORY TO A FAMOUS MATHEMATICAL PROBLEM

CLASSICAL AND QUANTUM DYNAMICS OF CONSTRAINED HAMILTONIAN SYSTEMS 2010-07-08 DISK CONTAINS INFORMATION ON CONFORMAL INVARIANTS SOFTWARE WHICH ACCOMPANIES THE TEXT

CATALAN'S CONJECTURE 1997 THIS BOOK PROVIDES A COMPREHENSIVE AND UP TO DATE INTRODUCTION TO HODGE THEORY ONE OF THE CENTRAL AND MOST VIBRANT AREAS OF CONTEMPORARY MATHEMATICS FROM LEADING SPECIALISTS ON THE SUBJECT THE TOPICS RANGE FROM THE BASIC TOPOLOGY OF ALGEBRAIC VARIETIES TO THE STUDY OF VARIATIONS OF MIXED HODGE STRUCTURE AND THE HODGE THEORY OF MAPS OF PARTICULAR INTEREST IS THE STUDY OF ALGEBRAIC CYCLES INCLUDING THE HODGE AND BLOCH BEILINSON CONJECTURES BASED ON LECTURES DELIVERED AT THE 2010 SUMMER SCHOOL ON HODGE THEORY AT THE ICTP IN TRIESTE ITALY THE BOOK IS INTENDED FOR A BROAD GROUP OF STUDENTS AND RESEARCHERS THE EXPOSITION IS AS ACCESSIBLE AS POSSIBLE AND DOESN'T REQUIRE A DEEP BACKGROUND AT THE SAME TIME THE BOOK PRESENTS SOME TOPICS AT THE FOREFRONT OF CURRENT RESEARCH THE BOOK IS DIVIDED BETWEEN INTRODUCTORY AND ADVANCED LECTURES THE INTRODUCTORY LECTURES ADDRESS K²HLER MANIFOLDS VARIATIONS OF HODGE STRUCTURE MIXED HODGE STRUCTURES THE HODGE THEORY OF MAPS PERIOD DOMAINS AND PERIOD MAPPINGS ALGEBRAIC CYCLES UP TO AND INCLUDING THE BLOCH

BEILINSON CONJECTURE AND CHOW GROUPS SHEAF COHOMOLOGY AND A NEW TREATMENT OF GROTHENDIECK'S ALGEBRAIC DE RHAM THEOREM
THE ADVANCED LECTURES ADDRESS A HODGE THEORETIC PERSPECTIVE ON SHIMURA VARIETIES THE SPREAD PHILOSOPHY IN THE STUDY OF
ALGEBRAIC CYCLES ABSOLUTE HODGE CLASSES INCLUDING A NEW SELF CONTAINED PROOF OF DELIGNE'S THEOREM ON ABSOLUTE HODGE
CYCLES AND VARIATION OF MIXED HODGE STRUCTURES THE CONTRIBUTORS INCLUDE PATRICK BROSNAN JAMES CARLSON EDUARDO CATTANI
FRANÇOIS CHARLES MARK ANDREA DE CATALDO FOUAD EL ZEIN MARK L GREEN PHILLIP A GRIFFITHS MATT KERR LING DING NG TRUNG NG LUCA
MIGLIORINI JACOB P MURRE CHRISTIAN SCHNELL AND LORING W TU

CONFORMAL INVARIANTS, INEQUALITIES, AND QUASICONFORMAL MAPS 2014-07-21 MATRIX IS AUSTRALIA'S INTERNATIONAL AND
RESIDENTIAL MATHEMATICAL RESEARCH INSTITUTE IT FACILITATES NEW COLLABORATIONS AND MATHEMATICAL ADVANCES THROUGH
INTENSIVE RESIDENTIAL RESEARCH PROGRAMS EACH 1-4 WEEKS IN DURATION THIS BOOK IS A SCIENTIFIC RECORD OF THE TEN PROGRAMS HELD
AT MATRIX IN 2019 AND THE TWO PROGRAMS HELD IN JANUARY 2020 TOPOLOGY OF MANIFOLDS INTERACTIONS BETWEEN HIGH AND LOW
DIMENSIONS AUSTRALIAN GERMAN WORKSHOP ON DIFFERENTIAL GEOMETRY IN THE LARGE APERIODIC ORDER MEETS NUMBER THEORY ERGODIC
THEORY DIOPHANTINE APPROXIMATION AND RELATED TOPICS INFLUENCING PUBLIC HEALTH POLICY WITH DATA INFORMED MATHEMATICAL
MODELS OF INFECTIOUS DISEASES INTERNATIONAL WORKSHOP ON SPATIAL STATISTICS MATHEMATICS OF PHYSIOLOGICAL RHYTHMS
CONSERVATION LAWS INTERFACES AND MIXING STRUCTURAL GRAPH THEORY DOWNUNDER TROPICAL GEOMETRY AND MIRROR SYMMETRY
EARLY CAREER RESEARCHERS WORKSHOP ON GEOMETRIC ANALYSIS AND PDES HARMONIC ANALYSIS AND DISPERSIVE PDES PROBLEMS AND
PROGRESS THE ARTICLES ARE GROUPED INTO PEER REVIEWED CONTRIBUTIONS AND OTHER CONTRIBUTIONS THE PEER REVIEWED ARTICLES
PRESENT ORIGINAL RESULTS OR REVIEWS ON A TOPIC RELATED TO THE MATRIX PROGRAM THE REMAINING CONTRIBUTIONS ARE PREDOMINANTLY
LECTURE NOTES OR SHORT ARTICLES BASED ON TALKS OR ACTIVITIES AT MATRIX

HODGE THEORY (MN-49) 2021-02-10

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