Geometry Sol G 3 Transformations Study Guide Lcps

The purpose of this handbook is to give an overview of some recent developments in differential geometry related to supersymmetric field theories. The main themes covered are: Special geometry and supersymmetry Generalized geometry Geometries with torsion Para-geometries Holonomy theory Symmetric spaces and spaces of constant curvature Conformal geometry Wave equations on Lorentzian manifolds D-branes and K-theory The intended audience consists of advanced students and researchers working in differential geometry, string theory, and related areas. The emphasis is on geometrical structures occurring on target spaces of supersymmetric field theories. Some of these structures can be fully described in the classical framework of pseudo-Riemannian geometry. Others lead to new concepts relating various fields of research, such as special Kahler geometry or generalized geometry.

This volume and Stochastic Processes, Physics and Geometry: New Interplays. I present state-of-the-art research currently unfolding at the interface between mathematics and physics. Included are select articles from the international conference held in Leipzig (Germany) in honor of Sergio Albeverio's sixtieth birthday. The theme of the conference, ``Infinite Dimensional (Stochastic)

Analysis and Quantum Physics", was chosen to reflect Albeverio's wide-ranging scientific interests. The articles in these books reflect that broad range of interests and provide a detailed overview highlighting the deep interplay among stochastic processes, mathematical physics, and geometry. The contributions are written by internationally recognized experts in the fields of stochastic analysis, linear and nonlinear (deterministic and stochastic) PDEs, infinite dimensional analysis, functional analysis, commutative and noncommutative probability theory, integrable systems, quantum and statistical mechanics, geometric quantization, and neural networks. Also included are applications in biology and other areas. Most of the contributions are high-level research papers. However, there are also some overviews on topics of general interest. The articles selected for publication in these volumes were specifically chosen to introduce readers to advanced topics, to emphasize interdisciplinary connections, and to stress future research directions. Volume I contains contributions from invited speakers; Volume II contains additional contributed papers.

Since 1975, the Marcel Grossmann Meetings have been organized to provide opportunities for discussing recent advances in gravitation, general relativity and relativistic field theories, emphasizing mathematical foundations, physical predictions and experimental tests. The objective of these meetings is to facilitate

exchange among scientists that may deepen our understanding of space-time structures and to review the status of ongoing experiments aimed at testing Einstein's theory of gravitation from either the ground or space.The Eighth Marcel Grossmann Meeting took place on 22-27 June, 1997, at the Hebrew University of Jerusalem, Israel. The scientific program included 25 plenary talks and 40 parallel sessions during which 400 papers were presented. The papers that appear in this book cover all aspects of gravitation, from mathematical issues to recent observations and experiments.

The aim of the series is to present new and important developments in pure and applied mathematics. Well established in the community over two decades, it offers a large library of mathematics including several important classics. The volumes supply thorough and detailed expositions of the methods and ideas essential to the topics in question. In addition, they convey their relationships to other parts of mathematics. The series is addressed to advanced readers wishing to thoroughly study the topic. Editorial Board Lev Birbrair, Universidade Federal do Ceará, Fortaleza, Brasil Victor P. Maslov, Russian Academy of Sciences, Moscow, Russia Walter D. Neumann, Columbia University, New York, USA Markus J. Pflaum, University of Colorado, Boulder, USA Dierk Schleicher, Jacobs University, Bremen, Germany

University Physics is designed for the two- or three-semester calculus-based physics course. The text has been developed to meet the scope and sequence of most university physics courses and provides a foundation for a career in mathematics, science, or engineering. The book provides an important opportunity for students to learn the core concepts of physics and understand how those concepts apply to their lives and to the world around them. Due to the comprehensive nature of the material, we are offering the book in three volumes for flexibility and efficiency. Coverage and Scope Our University Physics textbook adheres to the scope and sequence of most two- and three-semester physics courses nationwide. We have worked to make physics interesting and accessible to students while maintaining the mathematical rigor inherent in the subject. With this objective in mind, the content of this textbook has been developed and arranged to provide a logical progression from fundamental to more advanced concepts, building upon what students have already learned and emphasizing connections between topics and between theory and applications. The goal of each section is to enable students not just to recognize concepts, but to work with them in ways that will be useful in later courses and future careers. The organization and pedagogical features were developed and vetted with feedback from science educators dedicated to the project. VOLUME III Unit 1: Optics

Chapter 1: The Nature of Light Chapter 2: Geometric Optics and Image Formation Chapter 3: Interference Chapter 4: Diffraction Unit 2: Modern Physics Chapter 5: Relativity Chapter 6: Photons and Matter Waves Chapter 7: Quantum Mechanics Chapter 8: Atomic Structure Chapter 9: Condensed Matter Physics Chapter 10: Nuclear Physics Chapter 11: Particle Physics and Cosmology

Fast advances in information technology have led to a smarter world vision with ubiquitous interconnection and intelligence. Smart Manufacturing Innovation and Transformation: Interconnection and Intelligence covers both theoretical perspectives and practical approaches to smart manufacturing research and development triggered by ubiquitous interconnection and intelligence. This reference work discusses the transformation of manufacturing, the latest developments in smart manufacturing innovation, current and emerging technology opportunities, and market imperatives that enable manufacturing innovation and transformation, useful tools for readers in industry, academia, and government.

An authorised reissue of the long out of print classic textbook, Advanced Calculus by the late Dr Lynn Loomis and Dr Shlomo Sternberg both of Harvard University has been a revered but hard to find textbook for the advanced calculus course for decades. This book is based on an honors course in advanced

calculus that the authors gave in the 1960's. The foundational material, presented in the unstarred sections of Chapters 1 through 11, was normally covered, but different applications of this basic material were stressed from year to year, and the book therefore contains more material than was covered in any one year. It can accordingly be used (with omissions) as a text for a year's course in advanced calculus, or as a text for a three-semester introduction to analysis. The prerequisites are a good grounding in the calculus of one variable from a mathematically rigorous point of view, together with some acquaintance with linear algebra. The reader should be familiar with limit and continuity type arguments and have a certain amount of mathematical sophistication. As possible introductory texts, we mention Differential and Integral Calculus by R Courant, Calculus by T Apostol, Calculus by M Spivak, and Pure Mathematics by G Hardy. The reader should also have some experience with partial derivatives. In overall plan the book divides roughly into a first half which develops the calculus (principally the differential calculus) in the setting of normed vector spaces, and a second half which deals with the calculus of differentiable manifolds.

Roadmap to the Virginia SOLEOC GeometryThe Princeton Review

This comprehensive history traces the development of mathematical ideas and the

careers of the men responsible for them. Volume 1 looks at the disciplines origins in Babylon and Egypt, the creation of geometry and trigonometry by the Greeks, and the role of mathematics in the medieval and early modern periods. Volume 2 focuses on calculus, the rise of analysis in the 19th century, and the number theories of Dedekind and Dirichlet. The concluding volume covers the revival of projective geometry, the emergence of abstract algebra, the beginnings of topology, and the influence of Godel on recent mathematical study.

Modern Electronic Structure Theory provides a didactically oriented description of the latest computational techniques in electronic structure theory and their impact in several areas of chemistry. The book is aimed at first year graduate students or college seniors considering graduate study in computational chemistry, or researchers who wish to acquire a wider knowledge of this field.

This introductory text defines geometric structure by specifying parallel transport in an appropriate fiber bundle and focusing on simplest cases of linear parallel transport in a vector bundle. 1981 edition.

Roadmap to the Virginia SOL EOC Geometry includes strategies that are proven to enhance student performance. The experts at The Princeton Review provide •content review of the crucial material most likely to appear on the test •detailed lessons, complete with test-taking techniques for improving test scores •2 complete practice Virginia SOL EOC Geometry tests

Geometric Topology is a foundational component of modern mathematics, involving the study of spacial properties and invariants of familiar objects such as manifolds and complexes. This volume, which is intended both as an introduction to the subject and as a wide ranging resouce for those already grounded in it, consists of 21 expository surveys written by leading experts and covering active areas of current research. They provide the reader with an up-to-date overview of this flourishing branch of mathematics.

0Keywords:“This treatise is a pedogogically oriented collection of 22 chapters chosen to comprehensively present the quantum mechanics of electronic phenomena in molecules. It is an excellent effort to match increases in the physical understanding of chemistry with the astonishing advances in digital computer power and accessibility … The two-volume set is a necessary addition to chemistry libraries or research group holdings.”J. Am. Chem. Soc.

The study of group actions is more than a hundred years old but remains to this day a vibrant and widely studied topic in a variety of mathematic fields. A central development in the last fifty years is the phenomenon of rigidity, whereby one can classify actions of certain groups, such as lattices in semi-simple Lie groups. This provides a way to classify all possible symmetries of important spaces and all spaces admitting given symmetries. Paradigmatic results can be found in the seminal work of George Mostow, Gergory Margulis, and Robert J. Zimmer, among others. The papers in Geometry,

Rigidity, and Group Actions explore the role of group actions and rigidity in several areas of mathematics, including ergodic theory, dynamics, geometry, topology, and the algebraic properties of representation varieties. In some cases, the dynamics of the possible group actions are the principal focus of inquiry. In other cases, the dynamics of group actions are a tool for proving theorems about algebra, geometry, or topology. This volume contains surveys of some of the main directions in the field, as well as research articles on topics of current interest.

This volume contains the courses and lectures given during the workshop on Differential Geometry and Topology held at Alghero, Italy, in June 1992. The main goal of this meeting was to offer an introduction in attractive areas of current research and to discuss some recent important achievements in both the fields. This is reflected in the present book which contains some introductory texts together with more specialized contributions. The topics covered in this volume include circle and sphere packings, 3-manifolds invariants and combinatorial presentations of manifolds, soliton theory and its applications in differential geometry, G-manifolds of low cohomogeneity, exotic differentiable structures on R4, conformal deformation of Riemannian manifolds and Riemannian geometry of algebraic manifolds. Contents:Asystatic G-Manifolds (A Alekseevsky & D Alekseevsky)Les Paquets de Cercles (M Berger)Smooth Structures on Euclidean Spaces (S Demichelis)Surface Theory, Harmonic Maps and Commuting Hamiltonian Flows (D Ferus)Metric Invariants of Kähler Manifolds (M Gromov)On the

Sphere Packing Problem and the Proof of Kepler's Conjecture (W Y Hsiang)A 3-Gem Approach to Turaev-Viro Invariants (S L S Lins)Cohomology Operations and Modular Invariant Theory (L Lomonaco)Scalar Curvature and Conformal Deformation of Riemannian Manifolds (A Ratto)Lectures on Combinatorial Presentations of Manifolds (O Viro) Readership: Mathematicians. keywords:

According to the UK's Health and Safety Executive, there were over 148,000 reported accidents at work in 2010/2011, of which over 26,000 were major injuries. APIL Guide to Accidents at Work is designed specifically to meet the needs of claimant personal injury lawyers acting on behalf of workers who have suffered work-place injuries in the UK. The book is a practical and authoritative text which sets out the law and practice required to conduct such claims effectively. APIL Guide to Accidents at Work enables practitioners to make individual, principled assessments of employer's liability cases by focusing on the main UK common law principles and key statutory provisions, together with procedural guidance and practical advice on running a case. This second edition has been extensively revised and updated, and it includes a new chapter on risk assessment, a new section containing draft model pleadings, and all major case law.

Orbifolds locally look like quotients of manifolds by finite group actions. They play an important role in the study of proper actions of discrete groups on manifolds. This monograph presents recent fundamental results on the geometry and topology of 3-dimensional orbifolds, with an emphasis on their geometric properties. It is suitable

for graduate students and research mathematicians interested in geometry and topology.

This volume is an introduction to differential methods in physics. Part I contains a comprehensive presentation of the geometry of manifolds and Lie groups, including infinite dimensional settings. The differential geometric notions introduced in Part I are used in Part II to develop selected topics in field theory, from the basic principles up to the present state of the art. This second part is a systematic development of a covariant Hamiltonian formulation of field theory starting from the principle of stationary action.

In honour of the 65th birthday of Professor M Obata a workshop was held at Keio University. This volume includes notes on the talks and discussions which took place and cover a wide range of subjects on geometry, global analysis, topology and mathematical physics.

Proceedings of the NATO Advanced Research Workshop, held in Volga River, Russia, 24-28 May 2001

A revised and substantially enlarged edition of the Russian book Discrete transformation groups and manifold structures published by Nauka in 1983, this volume presents a comprehensive treatment of the geometric theory of discrete groups and the associated tessellations of the underlying space. Also

These proceedings comprise a selection of the peer-reviewed papers that were presented at the 2nd International Symposium on Liquid Crystals: Science and

Technology. Volume is indexed by Thomson Reuters CPCI-S (WoS). The topics of the 102 papers cover: the physics of liquid crystals, the chemistry of liquid crystals, applications of liquid crystals and related materials. This work will provide guidance to physicists, chemists and materials scientists working in the field of liquid crystals.
Early one morning in April of 1987, the Chinese mathematician J. -Q. Zhong died unexpectedly of a heart attack in New York. He was then near the end of a one-year visit in the United States. When news of his death reached his Chinese-American friends, it was immediately decided by one and all that something should be done to preserve his memory. The present volume is an outgrowth of this sentiment. His friends in China have also established a Zhong Jia-Qing Memorial Fund, which has since twice awarded the Zhong Jia-Qing prizes for Chinese mathematics graduate students. It is hoped that at least part of the reasons for the esteem and affection in which he was held by all who knew him would come through in the succeeding pages of this volume. The three survey chapters by Li and Treibergs, Lu, and Siu (Chapters 1-3) all center around the areas of mathematics in which Zhong made noteworthy contributions. In addition to putting Zhong's mathematical contributions in perspective, these articles should be useful also to a large segment of the mathematical community; together they give a coherent picture of a sizable portion of contemporary geometry. The survey of Lu differs from the other two in that it gives a firsthand account of the work done in the People's Republic of China in several complex variables in the last four decades.

Describing many of the most important aspects of Lie group theory, this book presents the subject in a 'hands on' way. Rather than concentrating on theorems and proofs, the book shows the applications of the material to physical sciences and applied mathematics. Many examples of Lie groups and Lie algebras are given throughout the text. The relation between Lie group theory and algorithms for solving ordinary differential equations is presented and shown to be analogous to the relation between Galois groups and algorithms for solving polynomial equations. Other chapters are devoted to differential geometry, relativity, electrodynamics, and the hydrogen atom. Problems are given at the end of each chapter so readers can monitor their understanding of the materials. This is a fascinating introduction to Lie groups for graduate and undergraduate students in physics, mathematics and electrical engineering, as well as researchers in these fields.

This book is an introduction to the theory of spatial quasiregular mappings intended for the uninitiated reader. At the same time the book also addresses specialists in classical analysis and, in particular, geometric function theory. The text leads the reader to the frontier of current research and covers some most recent developments in the subject, previously scatterd through the literature. A major role in this monograph is played by certain conformal invariants which are solutions of extremal problems related to extremal lengths of curve families. These invariants are then applied to prove sharp distortion theorems for quasiregular mappings. One of these extremal problems of

conformal geometry generalizes a classical two-dimensional problem of O. Teichmüller. The novel feature of the exposition is the way in which conformal invariants are applied and the sharp results obtained should be of considerable interest even in the two-dimensional particular case. This book combines the features of a textbook and of a research monograph: it is the first introduction to the subject available in English, contains nearly a hundred exercises, a survey of the subject as well as an extensive bibliography and, finally, a list of open problems.

The study of Euclidean distance matrices (EDMs) fundamentally asks what can be known geometrically given onlydistance information between points in Euclidean space. Each point may represent simply locationor, abstractly, any entity expressible as a vector in finite-dimensional Euclidean space.The answer to the question posed is that very much can be known about the points;the mathematics of this combined study of geometry and optimization is rich and deep.Throughout we cite beacons of historical accomplishment.The application of EDMs has already proven invaluable in discerning biological molecular conformation.The emerging practice of localization in wireless sensor networks, the global positioning system (GPS), and distance-based pattern recognitionwill certainly simplify and benefit from this theory.We study the pervasive convex Euclidean bodies and their various representations.In particular, we make convex polyhedra, cones, and dual cones more visceral through illustration, andwe study the geometric relation of polyhedral cones to nonorthogonal bases biorthogonal

expansion.We explain conversion between halfspace- and vertex-descriptions of convex cones,we provide formulae for determining dual cones,and we show how classic alternative systems of linear inequalities or linear matrix inequalities and optimality conditions can be explained by generalized inequalities in terms of convex cones and their duals.The conic analogue to linear independence, called conic independence, is introducedas a new tool in the study of classical cone theory; the logical next step in the progression:linear, affine, conic.Any convex optimization problem has geometric interpretation.This is a powerful attraction: the ability to visualize geometry of an optimization problem.We provide tools to make visualization easier.The concept of faces, extreme points, and extreme directions of convex Euclidean bodiesis explained here, crucial to understanding convex optimization.The convex cone of positive semidefinite matrices, in particular, is studied in depth.We mathematically interpret, for example,its inverse image under affine transformation, and we explainhow higher-rank subsets of its boundary united with its interior are convex.The Chapter on "Geometry of convex functions",observes analogies between convex sets and functions:The set of all vector-valued convex functions is a closed convex cone.Included among the examples in this chapter, we show how the real affinefunction relates to convex functions as the hyperplane relates to convex sets.Here, also, pertinent results formultidimensional convex functions are presented that are largely ignored in the literature;tricks and tips for determining their convexityand discerning

their geometry, particularly with regard to matrix calculus which remains largely unsystematizedwhen compared with the traditional practice of ordinary calculus.Consequently, we collect some results of matrix differentiation in the appendices.The Euclidean distance matrix (EDM) is studied,its properties and relationship to both positive semidefinite and Gram matrices.We relate the EDM to the four classical axioms of the Euclidean metric;thereby, observing the existence of an infinity of axioms of the Euclidean metric beyondthe triangle inequality. We proceed byderiving the fifth Euclidean axiom and then explain why furthering this endeavoris inefficient because the ensuing criteria (while describing polyhedra)grow linearly in complexity and number.Some geometrical problems solvable via EDMs,EDM problems posed as convex optimization, and methods of solution arepresented;\eg, we generate a recognizable isotonic map of the United States usingonly comparative distance information (no distance information, only distance inequalities).We offer a new proof of the classic Schoenberg criterion, that determines whether a candidate matrix is an EDM. Our proofrelies on fundamental geometry; assuming, any EDM must correspond to a list of points contained in some polyhedron(possibly at its vertices) and vice versa.It is not widely known that the Schoenberg criterion implies nonnegativity of the EDM entries; proved here.We characterize the eigenvalues of an EDM matrix and then devisea polyhedral cone required for determining membership of a candidate matrix(in Cayley-Menger form) to the convex cone of Euclidean distance matrices (EDM cone);

\ie,a candidate is an EDM if and only if its eigenspectrum belongs to a spectral cone for EDM^N.We will see spectral cones are not unique.In the chapter "EDM cone", we explain the geometric relationship betweenthe EDM cone, two positive semidefinite cones, and the elliptope.We illustrate geometric requirements, in particular, for projection of a candidate matrixon a positive semidefinite cone that establish its membership to the EDM cone. The faces of the EDM cone are described,but still open is the question whether all its faces are exposed as they are for the positive semidefinite cone.The classic Schoenberg criterion, relating EDM and positive semidefinite cones, isrevealed to be a discretized membership relation (a generalized inequality, a new Farkas'''''''-like lemma)between the EDM cone and its ordinary dual. A matrix criterion for membership to the dual EDM cone is derived thatis simpler than the Schoenberg criterion.We derive a new concise expression for the EDM cone and its dual involvingtwo subspaces and a positive semidefinite cone."Semidefinite programming" is reviewedwith particular attention to optimality conditionsof prototypical primal and dual conic programs,their interplay, and the perturbation method of rank reduction of optimal solutions(extant but not well-known).We show how to solve a ubiquitous platonic combinatorial optimization problem from linear algebra(the optimal Boolean solution x to Ax=b)via semidefinite program relaxation.A three-dimensional polyhedral analogue for the positive semidefinite cone of 3X3 symmetricmatrices is introduced; a tool for visualizing in 6 dimensions.In "EDM proximity"we explore methods

of solution to a few fundamental and prevalentEuclidean distance matrix proximity problems; the problem of finding that Euclidean distance matrix closestto a given matrix in the Euclidean sense.We pay particular attention to the problem when compounded with rank minimization.We offer a new geometrical proof of a famous result discovered by Eckart \& Young in 1936 regarding Euclideanprojection of a point on a subset of the positive semidefinite cone comprising all positive semidefinite matriceshaving rank not exceeding a prescribed limit rho.We explain how this problem is transformed to a convex optimization for any rank rho.

This book contains lecture notes of minicourses at the Regional Geometry Institute at Park City, Utah, in July 1992. Presented here are surveys of breaking developments in a number of areas of nonlinear partial differential equations in differential geometry. The authors of the articles are not only excellent expositors, but are also leaders in this field of research. All of the articles provide in-depth treatment of the topics and require few prerequisites and less background than current research articles.

This unique reference, aimed at research topologists, gives an exposition of the 'pseudo-Anosov' theory of foliations of 3-manifolds. This theory generalizes Thurston's theory of surface automorphisms and reveals an intimate connection between dynamics, geometry and topology in 3 dimensions. Significant themes returned to throughout the text include the importance of geometry, especially the hyperbolic geometry of surfaces, the importance of monotonicity, especially in1-dimensional and

co-dimensional dynamics, and combinatorial approximation, using finite combinatorical objects such as train-tracks, branched surfaces and hierarchies to carry more complicated continuous objects.

Hermann Minkowski recast special relativity as essentially a new geometric structure for spacetime. This book looks at the ideas of both Einstein and Minkowski, and then introduces the theory of frames, surfaces and intrinsic geometry, developing the main implications of Einstein's general relativity theory.

Distinct scientific communities are usually involved in the three fields of quasi-crystals, of liquid crystals, and of systems having modulated crystalline structures. However, in recent years, there has been a growing feeling that a number of common problems were encountered in the three fields. These comprise the need to recur to "exotic" spaces for describing the type of order of the atomic or molecular configurations of these systems (Euclidian "superspaces" of dimensions greater than 3, or 4-dimensional curved spaces); the recognition that one has to deal with geometrically frustrated systems, and also the occurence of specific excitations (static or dynamic) resulting from the continuous degeneracies of the stable structures considered. In the view of discussing these problems, aNA TO-Advance Research Workshop has assembled in Preveza (Greece), in september 1989,50 experts of the three considered fields (with an equal proportion of theorists and experimentalists). 35 hours of conferences and discussions have led to a more detailed evaluation of the similarities and of the

differences in the approaches implemented in the studies of the three types of systems. The papers contained in this NATO-series book provide the substance of this workshop. The reader will find three types of papers. Some very short papers giving the main ideas stated on a subject. Papers comprising 8-10 pages which stick closely to the contents of the talks presented. Longer papers providing more extensively the background and results relative to a given topic. It is worth summarizing the principal outputs of the workshop.

This volume derives from the second Iberoamerican Congress on Geometry, held in 2001 in Mexico at the Centro de Investigacion en Matematicas A.C. The conference topics were chosen with an eye toward the presentation of new methods, recent results, and the creation of more interconnections between the different research groups working in complex manifolds and hyperbolic geometry. Included here are their discussions revolving around questions of geometry that are related in one way or another to functions of a complex variable. There are contributors on Riemann surfaces, hyperbolic geometry, Teichmuller spaces, and quasiconformal maps. Complex geometry has many applications--triangulations of surfaces, combinatorics, ordinary differential equations, complex dynamics, and the geometry of special curves and jacobians, among others. In this book, research mathematicians around the globe working on complex geometry will find a selection of strong papers by international experts.

In February 1981, the classification of the finite simple groups (Dl)* was completed,t. * representing one of the most remarkable achievements in the history or mathematics. Involving the combined efforts of several hundred mathematicians from around the world over a period of 30 years, the full proof covered something between 5,000 and 10,000 journal pages, spread over 300 to 500 individual papers. The single result that, more than any other, opened up the field and foreshadowed the vastness of the full classification proof was the celebrated theorem of Walter Feit and John Thompson in 1962, which stated that every finite group of odd order (D2) is solvable (D3)-a statement expressi ble in a single line, yet its proof required a full 255-page issue of the Pacific 10urnal of Mathematics [93]. Soon thereafter, in 1965, came the first new sporadic simple group in over 100 years, the Zvonimir Janko group 1 , to further stimulate the 1 'To make the book as self-contained as possible. we are including definitions of various terms as they occur in the text. However. in order not to disrupt the continuity of the discussion. we have placed them at the end of the Introduction. We denote these definitions by (DI). (D2), (D3). etc.

Two meetings of the AMS in the fall of 1989--one at the Stevens Institute of Technology and the other at Ball State University--included Special Sessions on the role of p-adic methods in number theory and algebraic geometry. This volume grew out of these Special Sessions. Drawn from a wide area of mathematics, the articles presented here provide an excellent sampling of the broad range of trends and applications in p-adic

methods.