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Splitting Theorems for Certain Equivariant Spectra - L. Gaunce Lewis 2000
Let G be a compact Lie group, Π be a normal subgroup of G, $\mathcal G=G/\Pi$, X be a $\mathcal G$-space and Y be a G-space. There are a number of results in the literature giving a direct sum decomposition of the group $[\Sigma^\infty X,\Sigma^\infty Y]_G$ of equivariant stable homotopy classes of maps from X to Y. Here, these results are extended to a decomposition of the group $[B,C]_G$ of

equivariant stable homotopy classes of maps from an arbitrary finite $\mathcal G$-CW sptrum B to any G-spectrum C carrying a geometric splitting (a new type of structure introduced here). Any naive G-spectrum, and any spectrum derived from such by a change of universe functor, carries a geometric splitting. Our decomposition of $[B,C]_G$ is a consequence of the fact that, if C is geometrically split and $(\mathfrak F',\mathfrak F)$ is any reasonable pair of families of subgroups of G, then there is a splitting of the cofibre sequence $(E\mathfrak F_+ \wedge C)^\Pi \longrightarrow (E\mathfrak F'_+ \wedge C)^\Pi \longrightarrow (E(\mathfrak F', \mathfrak F) \wedge C)^\Pi$ constructed from the universal spaces for the families. Both the decomposition of the group $[B,C]_G$ and the splitting of the cofibre sequence are proven here not just for complete G-universes, but for arbitrary G-universes. Various technical results about incomplete G-universes that should be of independent interest are also included in this paper. These include versions of the Adams and Wirthmuller isomorphisms for incomplete universes. Also included is a vanishing theorem for the fixed-point spectrum $(E(\mathfrak F',\mathfrak F) \wedge C)^\Pi$ which gives computational force to the intuition that what really matters about a G-universe U is which orbits G/H embed as G-spaces in U.

University of California Union Catalog of Monographs Cataloged by the Nine Campuses from 1963 Through 1967: Subjects - University of California (System). Institute of Library Research 1972

Equivariant Cohomology Theories - Glen E. Bredon 2006-11-14

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Equivariant Homotopy and Cohomology Theory - J. Peter May 1996

This volume introduces equivariant homotopy, homology, and cohomology theory, along with various

related topics in modern algebraic topology. It explains the main ideas behind some of the most striking recent advances in the subject. The book begins with a development of the equivariant algebraic topology of spaces culminating in a discussion of the Sullivan conjecture that emphasizes its relationship with classical Smith theory. It then introduces equivariant stable homotopy theory, the equivariant stable homotopy category, and the most important examples of equivariant cohomology theories. The basic machinery that is needed to make serious use of equivariant stable homotopy theory is presented next, along with discussions of the Segal conjecture and generalized Tate cohomology.Finally, the book gives an introduction to 'brave new algebra', the study of point-set level algebraic structures on spectra and its equivariant applications. Emphasis is placed on equivariant complex cobordism, and related results on that topic are presented in detail. It introduces many of the fundamental ideas and concepts of modern algebraic topology. It presents comprehensive material not found in any other book on the subject. It provides a coherent overview of many areas of current interest in algebraic topology. It surveys a great deal of material, explaining main ideas without getting bogged down in details.

Gromov-Witten Invariants for Flag Manifolds - Bumsig Kim 1996

Applications of Complex Cobordism to Equivariant Maps - John Duane O'Neil 1968

Comprehensive Dissertation Index - 1989

The Gamma-Equivariant Form of the Berezin Quantization of the Upper Half Plane - Florin Rădulescu 1998

In this work, the author defines the Γ equivariant form of Berezin quantization, where Γ is a discrete

lattice in $PSL(2, \mathbb R)$. The Γ equivariant form of the quantization corresponds to a deformation of the space $\mathbb H/\Gamma$ ($\mathbb H$ being the upper halfplane). The von Neumann algebras in the deformation (obtained via the Gelfand-Naimark-Segal construction from the trace) are type II_1 factors. When Γ is $PSL(2, \mathbb Z)$, these factors correspond (in the setting considered by K. Dykema and independently by the author, based on the random matrix model of D. Voiculescu) to free group von Neumann algebras with a 'fractional number of generators'. The number of generators turns out to be a function of Planck's deformation constant. The Connes cyclic 2-cohomology associated with the deformation is analyzed and turns out to be (by using an automorphic forms construction) the coboundary of an (unbounded) cycle.

Hyperkähler Analogues of Kähler Quotients - Nicholas James Proudfoot 2004

Equivariant Analytic Localization of Group Representations - Laura Ann Smithies 2001

The problem of producing geometric constructions of the linear representations of a real connected semisimple Lie group with finite center, G_0, has been of great interest to representation theorists for many years now. A classical construction of this type is the Borel-Weil theorem, which exhibits each finite dimensional irreducible representation of G_0 as the space of global sections of a certain line bundle on the flag variety X of the complexified Lie algebra $\mathfrak g$ of G_0.In 1990, Henryk Hecht and Joseph Taylor introduced a technique called analytic localization which vastly generalized the Borel-Weil theorem. Their method is similar in spirit to Beilinson and Bernstein's algebraic localization method, but it applies to G_0 representations themselves, instead of to their underlying Harish-Chandra modules. For technical reasons, the

equivalence of categories implied by the analytic localization method is not as strong as it could be. In this paper, a refinement of the Hecht-Taylor method, called equivariant analytic localization, is developed. The technical advantages that equivariant analytic localization has over (non-equivariant) analytic localization are discussed and applications are indicated.

Dissertation Abstracts International - 2007

Comprehensive Dissertation Index: Mathematics & statistics. Physics, A-E - 1984

Equivariant Orthogonal Spectra and S-Modules - M. A. Mandell 2002

The last few years have seen a revolution in our understanding of the foundations of stable homotopy theory. Many symmetric monoidal model categories of spectra whose homotopy categories are equivalent to the stable homotopy category are now known, whereas no such categories were known before 1993. The most well-known examples are the category of S-modules and the category of symmetric spectra. We focus on the category of orthogonal spectra, which enjoys some of the best features of S-modules and symmetric spectra and which is particularly well-suited to equivariant generalization. We first complete the nonequivariant theory by comparing orthogonal spectra to S-modules. We then develop the equivariant theory.For a compact Lie group G, we construct a symmetric monoidal model category of orthogonal G-spectra whose homotopy category is equivalent to the classical stable homotopy category of G-spectra. We also complete the theory of S_G-modules and compare the categories of orthogonal G-spectra and S_G-modules. A key feature is the analysis of change of universe, change of group, fixed point, and orbit functors in these two highly structured

categories for the study of equivariant stable homotopy theory.

Bulletin of the American Mathematical Society - 1992

Involutions on Grassman Manifolds - Allen Henry Back 1977

Group Actions on Manifolds - Reinhard Schultz 1985

Not merely an account of new results, this book is also a guide to motivation behind present work and potential future developments. Readers can obtain an overall understanding of the sorts of problems one studies in group actions and the methods used to study such problems. The book will be accessible to advanced graduate students who have had the equivalent of three semesters of graduate courses in topology; some previous acquaintance with the fundamentals of transformation groups is also highly desirable. The articles in this book are mainly based upon lectures at the 1983 AMS-IMS-SIAM Joint Summer Research Conference, Group Actions on Manifolds, held at the University of Colorado. A major objective was to provide an overall account of current knowledge in transformation groups; a number of survey articles describe the present state of the subject from several complementary perspectives. The book also contains some research articles, generally dealing with results presented at the conference. Finally, there is a discussion of current problems on group actions and an acknowledgment of the work and influence of D. Montgomery on the subject.

Diagram Cohomology and Isovariant Homotopy Theory - Giora Dula 1994

In algebraic topology, obstruction theory provides a way to study homotopy classes of continuous maps in terms of cohomology groups; a similar theory exists for certain spaces with group actions and maps that are compatible (that is, equivariant) with respect to the group actions. This work provides a corresponding setting for certain spaces with

group actions and maps that are compatible in a stronger sense, called isovariant. The basic idea is to establish an equivalence between isovariant homotopy and equivariant homotopy for certain categories of diagrams. Consequences include isovariant versions of the usual Whitehead theorems for recognizing homotopy equivalences, an obstruction theory for deforming equivariant maps to isovariant maps, rational computations for the homotopy groups of certain spaces of isovariant functions, and applications to constructions and classification problems for differentiable group actions.

Cohomology Theory of Topological Transformation Groups - W.Y. Hsiang 2012-12-06

Historically, applications of algebraic topology to the study of topological transformation groups were originated in the work of L. E. 1. Brouwer on periodic transformations and, a little later, in the beautiful fixed point theorem ofP. A. Smith for prime periodic maps on homology spheres. Upon comparing the fixed point theorem of Smith with its predecessors, the fixed point theorems of Brouwer and Lefschetz, one finds that it is possible, at least for the case of homology spheres, to upgrade the conclusion of mere existence (or non-existence) to the actual determination of the homology type of the fixed point set, if the map is assumed to be prime periodic. The pioneer result of P. A. Smith clearly suggests a fruitful general direction of studying topological transformation groups in the framework of algebraic topology. Naturally, the immediate problems following the Smith fixed point theorem are to generalize it both in the direction of replacing the homology spheres by spaces of more general topological types and in the direction of replacing the group tl by more general compact groups.

Equivariant Cohomology of Configuration Spaces Mod 2 - Pavle V. M. Blagojević 2022-01-01

This book gives a brief treatment of the equivariant cohomology of the classical configuration space F(R^d,n) from its beginnings to recent developments. This subject has been studied intensively, starting with the classical papers of Artin (1925/1947) on the theory of braids, and progressing through the work of Fox and Neuwirth (1962), Fadell and Neuwirth (1962), and Arnol'd (1969). The focus of this book is on the mod 2 equivariant cohomology algebras of F(R^d,n), whose additive structure was described by Cohen (1976) and whose algebra structure was studied in an influential paper by Hung (1990). A detailed new proof of Hung's main theorem is given, however it is shown that some of the arguments given by him on the way to his result are incorrect, as are some of the intermediate results in his paper. This invalidates a paper by three of the authors, Blagojević, Lück and Ziegler (2016), who used a claimed intermediate result in order to derive lower bounds for the existence of k-regular and l-skew embeddings. Using the new proof of Hung's main theorem, new lower bounds for the existence of highly regular embeddings are obtained: Some of them agree with the previously claimed bounds, some are weaker. Assuming only a standard graduate background in algebraic topology, this book carefully guides the reader on the way into the subject. It is aimed at graduate students and researchers interested in the development of algebraic topology in its applications in geometry.

Topology, Geometry, and Algebra: Interactions and new directions - R. James Milgram 2001

This volume presents the proceedings from the conference on ``Topology, Geometry, and Algebra: Interactions and New Directions'' held in honor of R. James Milgram at Stanford University in August 1999. The meeting brought together distinguished researchers from a variety of areas related to

algebraic topology and its applications. Papers in the book present a wide range of subjects, reflecting the nature of the conference. Topics include moduli spaces, configuration spaces, surgery theory, homotopy theory, knot theory, group actions, and more. Particular emphasis was given to the breadth of interaction between the different areas.

Facets of Algebraic Geometry: Volume 2 - Paolo Aluffi 2022-04-07

Written to honor the 80th birthday of William Fulton, the articles collected in this volume (the second of a pair) present substantial contributions to algebraic geometry and related fields, with an emphasis on combinatorial algebraic geometry and intersection theory. Featured include commutative algebra, moduli spaces, quantum cohomology, representation theory, Schubert calculus, and toric and tropical geometry. The range of these contributions is a testament to the breadth and depth of Fulton's mathematical influence. The authors are all internationally recognized experts, and include well-established researchers as well as rising stars of a new generation of mathematicians. The text aims to stimulate progress and provide inspiration to graduate students and researchers in the field.

Toric Topology - International Conference on Toric Topology 2008

Toric topology is the study of algebraic, differential, symplectic-geometric, combinatorial, and homotopy-theoretic aspects of a particular class of torus actions whose quotients are highly structured. The combinatorial properties of this quotient and the equivariant topology of the original manifold interact in a rich variety of ways, thus illuminating subtle aspects of both the combinatorics and the equivariant topology. Many of the motivations and guiding principles of the fieldare provided by (though not limited to) the theory of toric varieties in algebraic geometry as well as that of symplectic toric

manifolds in symplectic geometry.This volume is the proceedings of the International Conference on Toric Topology held in Osaka in May-June 2006. It contains about 25 research and survey articles written by conference speakers, covering many different aspects of, and approaches to, torus actions, such as those mentioned above. Some of the manuscripts are survey articles, intended to give a broad overview of an aspect of the subject; all manuscripts consciously aim to be accessible to a broad reading audience of students andresearchers interested in the interaction of the subjects involved. We hope that this volume serves as an enticing invitation to this emerging field.

University of California Union Catalog of Monographs Cataloged by the Nine Campuses from 1963 Through 1967: Authors & titles - University of California (System). Institute of Library Research 1972

Torus Actions on the Rational Homotopy Product of Odd Spheres - Nicolas Michael Ercolani 1980

Ergodic Theory of Equivariant Diffeomorphisms: Markov Partitions and Stable Ergodicity - Michael Field 2004

We obtain stability and structural results for equivariant diffeomorphisms which are hyperbolic transverse to a compact (connected or finite) Lie group action and construct `Γ-regular' Markov partitions which give symbolic dynamics on the orbit space. We apply these results to the situation where Γ is a compact connected Lie group acting smoothly on M and F is a smooth (at least C^2) Γ-equivariant diffeomorphism of M such that the restriction of F to the Γ- and F-invariant set $\Lambda\subset M$ is partially hyperbolic with center foliation given by Γ-orbits. On the assumption that the Γ-orbits all have dimension equal to that of Γ, we show that there

is a naturally defined F- and Γ-invariant measure ν of maximal entropy on Λ (it is not assumed that the action of Γ is free). In this setting we prove a version of the Livsic regularity theorem and extend results of Brin on the structure of the ergodic components of compact group extensions of Anosov diffeomorphisms. We show as our main result that generically (F,Λ,ν) is stably ergodic (openness in the C^2-topology). In the case when Λ is an attractor, we show that Λ is generically a stably SRB attractor within the class of Γ-equivariant diffeomorphisms of M.

Notices of the American Mathematical Society - American Mathematical Society 1993

Boletín de la Sociedad Matemática Mexicana - Sociedad Matemática Mexicana 1991

Notes - Canadian Mathematical Society 1991

Vector Bundles and Representation Theory - Vector Bundles Conference on Hilbert Schemes 2003

This volume contains 13 papers from the conference on ``Hilbert Schemes, Vector Bundles and Their Interplay with Representation Theory''. The papers are written by leading mathematicians in algebraic geometry and representation theory and present the latest developments in the field. Among other contributions, the volume includes several very impressive and elegant theorems in representation theory by R. Friedman and J. W. Morgan, convolution on homology groups of moduli spaces of sheaves on K3 surfaces by H. Nakajima, and computation of the $S1$ fixed points in Quot-schemes and mirror principle computations for Grassmanians by S.-T. Yau, et al. The book is of interest to graduate students and researchers in algebraic geometry, representation theory, topology and their applications to high energy

physics.

A Localization Theorem for Derived Loop Spaces and Periodic Cyclic Homology - Harrison I-Yuan Chen 2018

Motivated by a theorem in the K-theoretic setting relating the localization of K_0(X/T) over a closed point z \in Spec(K_0(BT)) to the Borel-Moore homology of the fixed points H.^{BM}(X^z; C), we prove an equivariant localization theorem for smooth quotient stacks by reductive groups G in the setting of derived loop spaces and periodic cyclic homology, realizing a Jordan decomposition of loops described by Ben-Zvi and Nadler. We show that the derived loop space L(X/G) is a family of twisted unipotent loop spaces over Aff(L(BG)) = G//G; more precisely, the fiber over a formal neighborhood of a semisimple orbit [z] \in G//G is the unipotent loop space of the classical fixed points with a twisted S^1-action. We further study the relationship between unipotent loop spaces and formal loop spaces, and prove that their Tate S^1-invariant functions are isomorphic. Applying a theorem of Bhatt identifying derived de Rham cohomology with Betti cohomology, we obtain an equivariant localization theorem for periodic cyclic homology in the smooth case, identifying the completion of HP(Perf(X/G)) at z \in G//G with the 2-periodic equivariant singular cohomology of the z-fixed points H*(X^z/G^z; k)((u)).

Equivariant, Almost-arborescent Representations of Open Simply-connected 3-manifolds - Valentin Poenaru 2004

When one extends the (almost) collapsible pseudo-spine representation theorem for homotopy 3-spheres [Po3] to open simply connected 3-manifolds V^3, new phenomena appear: at the source of the representation, the set of double points is, generally speaking, no longer closed. We show that at the cost of replacing V^3 by $V_h^3 = \{V^3$ with very many holes $\}$, we can

always find representations $X^2 \stackrel {f} {\rightarrow} V^3$ with X^2 locally finite and almost-arborescent, with $\Psi (f)=\Phi (f)$, with the open regular neighbourhood (the only one which is well-defined here) Nbd$(fX^2)=V^3_h$ and such that on any precompact tight transversal to the set of double lines, we have only finitely many limit points (of the set of double points).Moreover, if V^3 is the universal covering space of a closed 3-manifold, $V^3=\widetilde M^3$, then we can find an X^2 with a free π_1M^3 action and having the equivariance property $f(gx)=gf(x)$, $g\in \pi_1M^3$. Having simultaneously all these properties for $X^2\stackrel{f} {\rightarrow} \widetilde M^3$ is one of the steps in the first author's program for proving that $\pi_1^\infty \widetilde M^3=[UNK]0$, [Po11, Po12]. Achieving equivariance is far from being straightforward, since X^2 is gotten starting from a tree of fundamental domains on which π_1M^3 cannot, generally speaking, act freely. So, in this paper we have both a representation theorem for general ($\pi_1=0$) V^3's and a harder equivariant representation theorem for $\widetilde M^3$ (with $gfX^2=fX^2, \, g\in\pi_1M^3$), the proof of which is not a specialization of the first, 'easier' result.But, finiteness is achieved in both contexts. In a certain sense, this finiteness is a best possible result, since if the set of limit points in question is $\emptyset$ (i.e. if the set of double points is closed), then $\pi_1^\infty V_h^3$ (which is always equal to $\pi_1^\infty V^3$) is zero. In [PoTa2] it was also shown that when we insist on representing V^3 itself, rather than V_h^3, and if V^3 is wild ($\pi_1^\infty\not =0$), then the transversal structure of the set of double lines can exhibit chaotic dynamical behavior. Our finiteness theorem avoids chaos at the cost of a lot of redundancy (the same double point (x, y) can be reached in

many distinct ways starting from the singularities).

Annals of Mathematics - 1974

Founded in 1884, Annals of Mathematics publishes research papers in pure mathematics.

Geometric Aspects of Analysis and Mechanics - Erik P. van den Ban 2011-06-28

Hans Duistermaat, an influential geometer-analyst, made substantial contributions to the theory of ordinary and partial differential equations, symplectic, differential, and algebraic geometry, minimal surfaces, semisimple Lie groups, mechanics, mathematical physics, and related fields. Written in his honor, the invited and refereed articles in this volume contain important new results as well as surveys in some of these areas, clearly demonstrating the impact of Duistermaat's research and, in addition, exhibiting interrelationships among many of the topics.

Supergroupoids, Double Structures, and Equivariant Cohomology - Rajan Amit Mehta 2006

The Floer Memorial Volume - Helmut Hofer 2012-12-06

Andreas Floer died on May 15, 1991 an untimely and tragic death. His visions and far-reaching contributions have significantly influenced the developments of mathematics. His main interests centered on the fields of dynamical systems, symplectic geometry, Yang-Mills theory and low dimensional topology. Motivated by the global existence problem of periodic solutions for Hamiltonian systems and starting from ideas of Conley, Gromov and Witten, he developed his Floer homology, providing new, powerful methods which can be applied to problems inaccessible only a few years ago. This volume opens with a short biography and three hitherto unpublished papers of Andreas Floer. It then presents a collection of invited contributions, and survey articles as well as research papers on his fields of interest, bearing testimony of the high

esteem and appreciation this brilliant mathematician enjoyed among his colleagues. Authors include: A. Floer, V.I. Arnold, M. Atiyah, M. Audin, D.M. Austin, S.M. Bates, P.J. Braam, M. Chaperon, R.L. Cohen, G. Dell' Antonio, S.K. Donaldson, B. D'Onofrio, I. Ekeland, Y. Eliashberg, K.D. Ernst, R. Finthushel, A.B. Givental, H. Hofer, J.D.S. Jones, I. McAllister, D. McDuff, Y.-G. Oh, L. Polterovich, D.A. Salamon, G.B. Segal, R. Stern, C.H. Taubes, C. Viterbo, A. Weinstein, E. Witten, E. Zehnder.

Rational S^1-Equivariant Stable Homotopy Theory - John Patrick Campbell Greenlees 1999

The memoir presents a systematic study of rational S^1-equivariant cohomology theories, and a complete algebraic model for them. It provides a classification of such cohomology theories in simple algebraic terms and a practical means of calculation. The power of the model is illustrated by analysis of the Segal conjecture, the behaviour of the Atiyah-Hirzebruch spectral sequence, the structure of S^1-equivariant K-theory, and the rational behaviour of cyclotomic spectra and the topological cyclic homology construction.

Equivariant E-Theory for C^*-Algebras - Erik Guentner 2000

This title examines the equivariant e-theory for c*-algebra, focusing on research carried out by Higson and Kasparov. Let A and B be C*-algebras which are equipped with continuous actions of a second countable, locally compact group G. We define a notion of equivariant asymptotic morphism, and use it to define equivariant E-theory groups EULG(A, B) which generalize the E-theory groups of Connes and Higson. We develop the basic properties of equivariant E-theory, including a composition product and six-term exact sequences in both variables, and apply our theory to the problem of calculating K-theory for group C*-algebras. Our main theorem gives a simple criterion for the assembly map of Baum and Connes to be an isomorphism.

The result plays an important role in the work of Higson and Kasparov on the Bau m-Connes conjecture for groups which act isometrically and metrically properly on Hilbert space

Abstracts of Papers Presented to the American Mathematical Society - American Mathematical Society 2003

Morse-Bott and Equivariant Theories Using Polyfolds - Zhengyi Zhou 2018

In this paper, we propose a general method of defining equivariant theories in symplectic geometry using polyfolds. The construction is twofold, one is for closed theories like equivariant Gromov-Witten theory, the other is for open theories like equivariant Floer cohomology. When a compact Lie group G acts on a tame strong polyfold bundle $p:W \to Z$, we construct a quotient polyfold bundle $\overline{p}:W/G \to Z/G$ if the G-action on Z only has finite isotropy. For a general group action and if Z has no boundary, then every G-equivariant sc-Fredholm section $s:Z\to W$ induces a $H^*(BG)$ module map $s_*: H^*_G(Z) \to H^{*-\ind s}(BG)$, which can be viewed as a generalization of the integration over the zero set $s^{-1}(0)$ when equivariant transversality holds. When Z is the Gromov-Witten polyfold, s_* yields a definition equivariant Gromov-Witten invariant for any symplectic manifold. We obtain a localization theorem for s_* if there exist tubular neighborhoods around the fixed locus in the sense of polyfold. For open theories, we first obtain a construction for the Morse-Bott theories under minimal transversality requirement. We discuss the relations between different constructions of cochain complexes for Morse-Bott theory. We explain how homological perturbation theory is used in Morse-Bott cohomology, in particular, both our construction and the cascades construction can be interpreted in that way, In the presence of group actions, we

construct cochain complexes for the equivariant theory. Expected properties like the independence of approximations of the classifying spaces and existence of action spectral sequences are proven. We carry out our construction for finite dimensional Morse-Bott cohomology using a generic metric and prove it recovers the regular cohomology. We outline the project of combining our construction with polyfold theory, which is expected to give a general construction for both Morse-Bott and equivariant Floer cohomology. In the last part, we show that for any asymptotically dynamically convex contact manifold Y, the vanishing of symplectic homology $SH(W)=0$ is a property independent of the choice of topologically simple (i.e. $c_1(W)=0$ and $\pi_{1}(Y)\to \pi_1(W)$ is injective) Liouville filling W. As a consequence, we answer a question of Lazarev partially: a contact manifold Y admitting flexible fillings determines the integral cohomology of all the topologically simple Liouville fillings of Y.

Perturbed Gradient Flow Trees and A∞-algebra Structures in Morse Cohomology - Stephan Mescher 2018-04-25

This book elaborates on an idea put forward by M. Abouzaid on equipping the Morse cochain complex of a smooth Morse function on a closed oriented manifold with the structure of an A∞-algebra by means of perturbed gradient flow trajectories. This approach is a variation on K. Fukaya's definition of Morse-A∞-categories for closed oriented manifolds involving families of Morse functions. To make A∞-structures in Morse theory accessible to a broader audience, this book provides a coherent and detailed treatment of Abouzaid's approach, including a discussion of all relevant analytic notions and results, requiring only a basic grasp of Morse theory. In particular, no advanced algebra skills are required, and the perturbation theory for Morse trajectories is

completely self-contained. In addition to its relevance for finite-dimensional Morse homology, this book may be used as a preparation for the study of Fukaya categories in symplectic geometry. It will be of interest to researchers in mathematics (geometry and topology), and to graduate students in mathematics with a basic command of the Morse theory.