

John Milnor Bibliography

Books

- [i] Morse Theory (with M. Spivak and R. Wells), Ann. Math. Studies 51, Princeton U. Press 1963. (Russian translation 1965; Japanese translation 1968; Korean translation 1999.)
- [ii] Lectures on the h-Cobordism Theorem (with L. Siebenmann and J. Sondow), Princeton U. Press 1965. (Russian translation 1969; revised edition in preparation 2007.)
- [iii] Topology from the Differentiable Viewpoint, U. Virginia Press 1965, Princeton University Press 1998. (Russian translation 1972; as part of “Differential Topology: a First Course”; Japanese translation 1998.)
- [iv] Singular Points of Complex Hypersurfaces, Ann. Math. Studies 61, Princeton U. Press 1968. (Russian translation 1971; Japanese translation 2003.)
- [v] Introduction to Algebraic K-Theory, Ann. Math. Studies 72, Princeton U. Press 1971. (Russian translation 1974.)
- [vi] Symmetric Bilinear Forms (with D. Husemoller), Springer 1973. (Russian translation 1986.)
- [vii] Characteristic Classes (with J. Stasheff), Princeton U. Press 1974. (Russian translation 1979; Japanese translation 2001; reprinted Hindustan Book Agency 2005.)
- [viii] Collected Papers I, Geometry, Publish or Perish 1994; AMS, to appear.
- [ix] Collected Papers II, The Fundamental Group, Publish or Perish 1995; AMS, to appear.
- [x] Dynamics in One Complex Variable, Vieweg 1999, 2000; Princeton U. Press 2006.
- [xi] Collected Papers III, Differential Topology, AMS, to appear 2007.

Papers

- [1] On the total curvature of knots, Ann of Math. (2) 52 (1950), 248-257.¹
- [2] An axiomatic approach to measurable utility, (with I.N. Herstein), Econometrica 21 (1953), pp 291-297.
- [3] The characteristics of a vector field on the two-sphere, Ann. of Math (2) 58 (1953), 253-257.
- [4] On total curvatures of closed space curves, Math. Scand. 1 (1953), 289-296.¹
- [5] Sums of positional games in “Contributions to the Theory of Games, Vol. II” (H. W. Kuhn and A.W. Tucker, eds.), Ann. of Math. Stud. No. 28, Princeton University Press, Princeton, N.J., 1953, pp. 291-301.
- [6] Games against nature, in “Decision Processes,” (R. M. Thrall, C.H. Coombs and R.L. Davis, eds.) Wiley, New York; Chapman and Hall Ltd., London, 1954, pp. 49-59. (Reprinted in “Game Theory and Related Approaches to Social Behavior,” (M. Shubik, ed.), Wiley, New York, 1964)
- [7] Some experimental n-person games, (with G. Kalish, J. Nash, and E.D. Nering), in “Decision Processes,” (see previous reference), pp. 301-327.

¹ Reprinted in “Collected Papers I, Geometry” ([viii] above).

- [8] Link groups, *Ann. of Math.* (2) 59 (1954), 177-295.²
- [9] Construction of universal bundles, I, *Ann. of Math.* (2) 63 (1956), 272-284.
- [10] Construction of universal bundles, II, *Ann. of Math.* (2) 63 (1956), 430-436.
- [11] On the immersion of n -manifolds in $n + 1$ -space, *Comment. Math. Helv.* 30 (1956), 275-284.
- [12] On manifolds homeomorphic to the 7-sphere, *Ann. of Math.* (2) 64 (1956)399-405.
- [13] The geometric realization of a semi-simplicial complex, *Ann. of Math.* (2) 65 (1957), 357-362.
- [14] Groups which act on S^n without fixed points, *Amer. J. Math.* 79 (1957), 623-630.²
- [15] Isotopy of links, in “Algebraic Geometry and Topology. A. Symposium in Honor of S. Lefschetz,” (R.H. Fox, D.C. Spencer and A.W. Tucker, eds.), Princeton University Press, Princeton, N.J., 1957, pp. 280-306.²
- [16] On games of survival, (with L.S. Shapley), in “Contributions to the Theory of Games, Vol. III,” (M. Dresher, A.W. Tucker and P. Wolfe, eds.), *Ann. of Mth. Stud.* No. 39, Princeton University Press, Princeton, N.J. 1957, pp. 15-45.
- [17] On the existence of a connection with curvature zero, *Comment. Math. Helv.* 32 (1958), 215-223.¹
- [18] Some consequences of a theorem of Bott, *Ann. of Math.* (2) 68 (1958), 444-449.
- [19] On the parallelizability of the spheres, (with R.Bott), *Bull, Amer. Math. Soc.* (N.S.) 64 (1958), 87-89.
- [20] The Steenrod algebra and its dual, *Ann. of Math.* (2) 67 (1958), 150-171.
- [21] On simply connected 4-manifolds, in “Symposium Internacional de Topologia Algebraica,” Univ. Nac. Autonoma de Mexico and UNESCO, Mexico City, 1958, pp. 122-128.
- [22] On the Whitehead homomorphism, *J. Bull. Amer. Math. Soc.* (N.S.) 64 (1958), 79-82.
- [23] Differentiable structures on spheres, *Amer. J. Math.* 81 (1959), 962-972.
- [24] Sommes de varietes differentiables et structures differentiables des spheres, *Bull. Soc. Math. France* 87 (1959), 439-444.
- [25] On spaces having the homotopy type of a CW-complex, *Trans. Amer. Math. Soc.* 90 (1959), 272-280.
- [26] Bernoulli numbers, homotopy groups, and a theorem of Rohlin, (with M. A. Kervaire), in “Proc. Internat. Congress Math. 1958,” Cambridge University Press, 1960, pp. 454-458.
- [27] Two remarks on fibre homotopy type, (with E. Spanier), *Pacific J. Math.* 10 (1960), 585-590.
- [28] On the cobordism ring Ω^* and a complex analogue, I, *Amer. J. Math.* 82 (1960), 505-521.
- [29] A procedure for killing homotopy groups of differentiable manifolds, in “Differential Geometry Proc. Symposia Pure Math. Vol. III,” Amer. Math. Soc., Providence, R.I., (1961), pp. 39-55.
- [30] Two complexes with are homeomorphic but combinatorially distinct, *Ann. of Math.* (2) 74 (1961), 575-590.²
- [31] On 2-spheres in 4-manifolds, (with M.A. Kervaire), *Proc. Nat. Acad. Sci. U.S.A.* 47

² Reprinted in “Collected Papers II, The Fundamental Group” ([ix] above).

- (1961), 1651-1957.
- [32] Variedades lisas con frontera, *An. Inst. Mat. Univ. Nac. Autonoma Mexico* 1 (1961), 82-116.
- [33] A unique decomposition theorem for 3-manifolds, *Amer. J. Math.* 84 (1962), 1-7.²
- [34] A duality theorem for Reidemeister torsion, *Ann. of Math. (2)* 76 (1962), 137-147.²
- [35] A survey of cobordism theory, *Enseign. Math. (2)* 8 (1962), pp. 16-23.
- [36] On axiomatic homology theory, *Pacific J. Math* 12 (1962), 337-341. (Reprinted in "Algebraic Topology: A Student's Guide," by J.F. Adams, Cambridge University Press, 1972.)
- [37] An example of anomalous singular homology, (with M.G. Barratt), *Proc. Amer. Math. Soc.* 13 (1962), 293-297.
- [38] The work of J.H.C. Whitehead, in "The Mathematical Works of J.H.C. Whitehead, Vol 1," Pergamon Press, Oxford, New York, (1962), pp. xxi-xxxiii.
- [39] Topological manifolds and smooth manifolds, in "Proc. Internat. Congress Math. Stockholm 1962," *Inst. Mittag-Leffler, Djursholm*, (1963), pp. 132-138.
- [40] Spin structures on manifolds, *Enseign. Math. (2)* 9 (1963), 198-203).
- [41] Groups of homotopy spheres, (with M.A. Kervaire), *Ann. of Math. (2)* 77 (1963), 504-537.
- [42] On the Betti numbers of real varieties, *Proc. Amer. Math. Soc.* 15 (1964), 275-280.¹
- [43] Eigenvalues of the Laplace operator on certain manifolds, *Proc. Nat. Acad. Sci. U.S.A.* 51 (1964), 542.¹
- [44] Microbundles, I, *Topology* 3 (1964) Suppl. 1, 53-80.
- [45] Most knots are wild, *Fund. Math.* 54 (1964), 335-338.²
- [46] Differential topology, in "Lectures on Modern Mathematics, Vol. II" T. L. Saaty, ed., Wiley, New York, 1964, pp. 165-183. (Russian translation: *Uspehi Mat. Nauk* 20 (1965), pp. 41-54.)
- [47] Some curious involutions of spheres, (with M.W. Hirsch), *Bull. Amer. Math. Soc. (N.S.)* 70 (1964), 372-377.²
- [48] Some free actions of cyclic groups on spheres, in "Differential Analysis. Bombay Colloquium," Oxford University Press, London, 1964, pp. 37-42.²
- [49] On the structure of Hopf algebras, (with J.C. Moore), *Ann. of Math. (2)* 81 (1965), 211-264.
- [50] On the Stiefel-Whitney numbers of complex manifolds and of spin manifolds, *Topology* 3 (1965), 223-230.
- [51] Remarks concerning spin manifolds, in "Differential and Combinatorial Topology. A Symposium in Honor of Marston Morse," Princeton University Press, Princeton, N.J., 1965, pp. 55-62.
- [52] Whitehead torsion, *Bull. Amer. Math. Soc. (N.S.)* 72 (1966), 358-426.²
- [53] Singularities of 2-spheres in 4-space and cobordism of knots (with R.H. Fox), *Osaka J. Math.* 3 (1966), 257-267.²
- [54] Solution of the congruence subgroup problem for SL_n ($n \geq 3$) and Sp_{2n} ($n \geq 2$), (with H. Bass and J.-P. Serre), *IHES Publ. Math. No. 33* (1967), 59-137. (Erratum: J.-P.

- Serre, On a functorial property of power residue symbols. *IHES Publ. Math.* 44 (1974), 241–244.)
- [55] On characteristic classes for spherical fiber spaces, *Comment. Math. Helv.* 43 (1968), 51-77.
- [56] A note on curvature and fundamental group, *J. Differential Geom.* 2 (1968), 1-7.¹
- [57] Infinite cyclic covering, in “Conference on the Topology of Manifolds,” (J.G. Hocking, ed.), Prindle, Weber and Schmidt, Boston, 1968, pp. 115-133.²
- [58] Growth of finitely generated solvable groups, *J. Differential Geom.* 2 (1968), 447-449.
- [59] On isometries of inner product spaces, *Invent. Math.* 8 (1969), 83-97.
- [60] Semi-characteristics and cobordism, (with G. Lusztig and F.P. Peterson), *Topology* 8 (1969), 357-359.
- [61] A problem in cartography, *Amer. Math. Monthly* 76 (1969), 1102-1112.¹
- [62] Torsion et type simple d’homotopie, (with O. Burlet), in “Essays on Topology and Related Topics, Memoires dedies a George de Rham,” Springer-Verlag, Berlin, New York, 1970, pp. 12-17.²
- [63] Algebraic K-theory and quadratic forms, *Invent. Math.* 9 (1970), 318-344.
- [64] Isolated singularities defined by weighted homogeneous polynomials, (with P. Orlik), *Topology* 9 (1970), 385-393.¹
- [65] Symmetric inner product spaces in characteristic 2, in “Prospects in Mathematics” *Ann. of Math. Stud.* No. 70, Princeton University Press, Princeton, N.J. , (1971), pp. 59-75.
- [66] On the construction FK, in “Algebraic Topology: A Student’s Guide,” by J. F. Adams, Cambridge University Press, (1972), pp. 119-136.
- [67] Isolated critical points of complex functions, in “Differential Geometry. Proc. Symposia Pure Mth. Vol XXVII, Part I,” *Amer. Math. Soc.*, Providence, R.I., (1975), pp. 381-382.¹
- [68] On the 3-dimensional Brieskorn manifolds $M(p, q, r)$, in “Knots, groups and 3-manifolds. Papers dedicated to the memory of R.H. Fox” (L.P. Neuwirth, ed.), *Ann. of Mth. Stud.* No. 84, Princeton University Press, Princeton, N.J., (1975), pp. 175-225.²
- [69] Hilbert’s problem 18: on crystallographic groups, fundamental domains, and on sphere packing, in “Mathematical Developments Arising from Hilber Problems. Proc. Symposia Pure Mth. Vol. XXVIII,” *Amer. Math. Soc.*, Providence, R.I. (1976), pp. 491-506.¹
- [70] Differential geometry problem list, *ibid.*, 54-57.¹
- [71] Curvatures of left invariant metrics on Lie groups, *Adv. in Mth.* 21 (1976), 293-329.¹
- [72] On deciding whether a surface is parabolic or hyperbolic, *Amer. Math. Monthly* 84 (1977), 43-46.¹
- [73] On fundamental groups of complete affinely flat manifolds, *Adv. in Math.* 25 (1977), 178-187.¹
- [74] Characteristic numbers of 3-manifolds, (with W. Thurston), *Enseign. Math.* (2) 23 (1977), 249-254.²
- [75] Analytic proofs of the “hairy ball theorem” and the Brouwer fixed point theorem, *Amer. Math. Monthly* 85 (1978), 521-524.¹
- [76] Hyperbolic geometry: the first 150 years, *Bull. Amer. Math. Soc. (N.S.)* 6 (1982), 72-85.¹

- [77] On the homology of Lie groups made discrete, *Comment. Math. Helv.* 58 (1983), 72-85.
- [78] On the geometry of Kepler problem, *Amer. Math. Monthly* 90 (1983), 353-365.¹
- [79] Remarks on infinite-dimensional Lie groups, in “Relativity, Groups and Topology II,” Les Houches Session XL, 1983, B.S. DeWitt and R. Stora, eds., Elsevier Science Publishers B.V. North Holland, (1986), pp. 1007-1058.
- [80] Values of large games II: oceanic games, (with L.S. Shapley, written in 1961), *Math. Oper. Res.* 3 (1978), 290-307.
- [81] On polyogarithms, Hurwitz zeta functions, and the Kubert identities, *Enseign. Math.* (2) 29 (1983), 281-322.
- [82] On the concept of attractor, *Comm. Math. Phys.* 99 (1985), 177-195; 102 (1985), 517-519.
- [83] Directional entropies of cellular automation-maps, in “Disordered Systems and Biological Organization,” (Bienenstock et al., eds.), Springer-Verlag, Berlin, New York, (1986), pp. 113-115.
- [84] The work of M. H. Freedman, in “Proc. Internat. Congress Math. Berkeley, 1986,” *Amer. Math. Soc.*, Providence, R.I., (1987), 13-15.
- [85] Non-expansive Henon maps, *Adv. in Math* 69 (1988), 109-11.
- [86] On the entropy geometry of cellular automata, *Complex Systems* 2 (1988), 357-386.
- [87] On iterated maps of the interval, (with W. Thurston, preprint 1977), in “Dynamical Systems” (J.C.Alexander, ed.), *Lect. Notes Math.* 1342, Springer-Verlag, Berlin, New York (1988), pp. 465-563.
- [88] Dynamical properties of plane polynomial automorphisms, (with S. Friedland), *Ergodic Theory Dynamical Systems* 9 (1989), 667-699.
- [89] Self-similarity and hairiness in the Mandelbrot set, in “Computers in Geometry and Topology,” (M.C. Tangora, ed.), Marcel Dekker, New York, Basel, (1989), pp 211-257.
- [90] Remarks on iterated cubic maps, *Experiment. Math.* 1 (1992), 5–24. (Preprint: ims90-5.³)
- [91] Hyperbolic components in spaces of polynomial maps, with an appendix by A. Poirier. IMS preprint: ims92-3.³
- [92] The Fibonacci unimodal map (with M. Lyubich), *J. Amer. Math. Soc.* 6 (1993) 425-457. (Preprint: ims91-15.³)
- [93] Geometry and dynamics of quadratic rational maps, *Experimental Math.* 2 (1993) 37-83. (Preprint: ims92-14.³)
- [94] Fixed points of polynomial maps II, Fixed point portraits (with L. Goldberg), *Ann. Sci. Éc. Norm. Sup. Paris* (4^e ser.) 26 (1993) 51-98.
- [95] On a relationship between the Betti numbers of a hypersurface and an integral of its Gaussian curvature. (Junior paper, 1950; first published as pp. 15-26 of “Collected Papers I”, 1994. (See [viii] above.)
- [96] How to compute volume in hyperbolic space. (Notes from 1978, published as pp. 189-212

³ Stony Brook IMS (Institute for Mathematical Sciences) preprints are available at www.math.sunysb.edu/preprints.html, and also at arxiv.org. In most cases these represent earlier versions of papers which were later published.

- of [viii].)
- [97] Euler characteristic and finitely additive Steiner measures. (Notes from 1978, published as pp. 213-234 of [viii].)
- [98] The Schläfli differential inequality. (Based on notes from 1983. Published as pp. 281-295 of [viii].)
- [99] Uses of the fundamental group. (An outline circulated at the 1968 Colloquium Lectures in Madison. First published as pp. 221-225 of [ix].)
- [100] A monotonicity conjecture for real cubic maps (with S. Dawson, R. Galeeva and C. Tresser), pp. 165-183 of “Real and Complex Dynamical Systems”, edit. B. Branner and P. Hjorth, Kluwer 1995. (Preprint: ims93-11.³)
- [101] On the Steenrod homology theory, pp. 79-96 of “Novikov Conjectures, Index Theorems and Rigidity 1”, edit. S. Ferry, A. Ranicki and J. Rosenberg, Cambridge U. Press 1995.
- [102] A Nobel prize for John Nash, *Math. Intelligencer* 17 (1995) 11-17.
- [103] The work of M. H. Freedman, Fields Medallists’ lectures, 405–408, *World Sci. Ser. 20th Century Math.*, 5, World Sci. Publishing, River Edge, NJ, 1997.
- [104] Fubini foiled: Katok’s paradoxical example in measure theory. *Math. Intelligencer* 19 (1997), no. 2, 30–32.
- [105] John Nash and ‘A Beautiful Mind’, *Notices A.M.S.*, November 1998
- [106] The Mathematical Work of Curt McMullen, *Notices A.M.S.*, January 1999
- [107] Growing up in the old Fine Hall, pp. 1-11 of “Prospects in Mathematics” (Princeton 1996) AMS 1999.
- [108] Local connectivity of Julia sets: expository lectures, pp. 67-116 of “The Mandelbrot set, Theme and Variations” edit: Tan Lei, *LMS Lecture Note Series* 274, Cambr. U. Press 2000. (Preprint: ims92-11.³)
- [109] Rational maps with two critical points, *Experimental Math.* 9 (2000) 481-522. (Preprint: ims97-10.³)
- [110] On Entropy and Monotonicity for Real Cubic Maps (with Tresser; and with an appendix by Douady and Sentinac) *Comm. Math. Phys.* 209 (2000) 123-178. (Preprint: ims98-09.³)
- [111] Classification of $(n-1)$ -connected $2n$ -manifolds, and the discovery of exotic spheres, pp. 25-30 of “Surveys on Surgery Theory 1”, edit. Cappell, Ranicki and Rosenberg, *Ann. Math. Stud.* 145, Princeton U. Press 2000.
- [112] Periodic orbits, external rays and the Mandelbrot set: An expository account, *Asterisque* 261 (2000) “Geometrie Complexe et Systemes Dynamiques”, pp. 277-333. (Preprint: ims99-03.³)
- [113] Towards the Poincare conjecture and the classification of 3-manifolds, *Notices A.M.S.*, November 2003
- [114] Pasting together Julia sets; a worked out example of mating, *Experimental Math* 13 (2004) 55-92.
- [115] On Lattès maps, in “Dynamics on the Riemann Sphere, A Bodil Branner Festschrift”, edit. Hjorth and Petersen, *Eur. Math. Soc* 2006. (Preprint: ims04-01.³)
- [116] Elliptic curves as attractors in \mathbb{P}^2 : Part 1 Dynamics (with A. Bonifant and M. Dabija); *Experimental Math.*, to appear. (Preprint: ims06-01.³)

- [117] Schwarzian derivatives and cylinder maps (with A. Bonifant); Preprint: ims06-07.³
- [118] Fifty years ago: Topology of manifolds in the 50's and 60's; to appear, Park City Mathematics Series for 2006.⁴
- [119] On cubic polynomial maps with periodic critical point; to appear in Hubbard Festschrift.⁴

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⁴ Available on www.math.sunysb.edu/~jack/PREPRINTS .