

Bibliography

- AGMON, S.: The L_p approach to the Dirichlet problem. Ann. Scuola Norm. Sup. Pisa **13**, 405—448 (1959).
- AGMON, S., DOUGLIS, A., and L. NIRENBERG: [1] Estimates near the boundary for the solutions of elliptic differential equations satisfying general boundary values I, Comm. Pure Appl. Math. **12**, 623—727 (1959).
— [2] Estimates near the boundary for the solutions of elliptic differential equations satisfying general boundary values II, Comm. Pure Appl. Math. **17**, 35—92 (1964).
- AKHIEZER, N. T.: The calculus of variations (trans. from Russian by ALINE H. FRINK), New York: Blaisdell Publishing Co. 1962.
- ALEXANDROFF, P., and H. HOPF: Topologie. Berlin: Springer 1935.
- ARONSZAJN, N., KRZYWICKI, A., and J. SZARSKI: A unique continuation theorem for exterior differential forms on Riemannian manifolds. Arkiv för Math. **4**, 417—453 (1962).
- ARONSZAJN, N., and K. T. SMITH: [1] Functional spaces and functional completion. Ann. Inst. Fourier (Grenoble) **6**, 125—185 (1956).
— [2] Theory of Bessel potentials I, Studies in eigenvalue problems. Technical Report No. 22, University of Kansas, 1959.
- BERNSTEIN, S.: [1] Sur la nature analytique des solutions des équations aux dérivées partielles du second ordre, Math. Ann. **59**, 20—76 (1904).
— [2] Démonstration du théorème de M. HILBERT sur la nature analytique des solutions des équations du type elliptique sans l'emploi des séries normales. Math. Zeit **28**, 330—348 (1928).
- BESICOVITCH, A. S.: Parametric surfaces. Bull. Amer. Math. Soc. **56**, 288—296 (1950).
- BICADZE, A. V.: On the uniqueness of the solution of the Dirichlet problem for elliptic partial differential equations. Uspehi Mat. Nauk (N. S.) **3**, 211—212 (1948).
- BLISS, G. A.: Lectures on the calculus of variations. University of Chicago Press, 1946.
- BOCHER, M.: Introduction to Higher Algebra. New York, The Macmillan Co. 1931.
- BOCHNER, S.: [1] Analytic mapping of compact Riemann spaces into Euclidean space. Duke Math. J. **3**, 339—354 (1937).
— [2] Harmonic surfaces in Riemann metric, Trans. Amer. Math. Soc. **47**, 146—154 (1940).
- BOERNER, H.: Über die Legendresche Bedingung und die Feldtheorien in die Variationsrechnung der mehrfachen Integrale. Math. Z. **46**, 720—742 (1940) (and two earlier papers).
- BOLZA, O.: Lectures on the calculus of variations. New York: Chelsea Publishing Co.

- BROWDER, F. E.: [1] On the spectral theory of elliptic differential operators, I. *Math. Ann.* **142**, 22—130 (1961).
- [2] On the spectral theory of elliptic differential operators, II. *Math. Ann.* **145**, 81—226 (1962) (and other papers).
 - [3] Non-linear elliptic boundary value problems. *Bull. Amer. Math. Soc.* **69**, 862—874 (1963).
- CALDERON, A. P.: Lebesgue spaces of differentiable functions and distributions. *Proc. Symp. Pure Math.* IV, Amer. Math. Soc., Providence, R. I., 33—49 (1961).
- , and A. ZYGMUND: [1] On the existence of certain singular integrals. *Acta Math.* **88**, 85—139 (1952).
 - [2] Singular integral operators and differential equations. *Amer. J. Math.* **79**, 901—921 (1957).
- CALKIN, J. W.: Functions of several variables and absolute continuity I. *Duke Math. J.* **6**, 170—185 (1940).
- CARATHEODORY, C.: [1] Über die Variationsrechnung bei mehrfachen Integralen, *Acta Szeged* **4**, 193—216, (1929).
- [2] Variationsrechnung und partielle Differentialgleichungen erster Ordnung. Leipzig: Teubner 1935.
- CESARI, L.: [1] La nozione di integrale sopra una superficie in forma parametrica. *Ann. Scuola Norm. Sup. Pisa* **13**, 73—117 (1947).
- [2] Condizioni sufficienti per la semicontinuità degli integrali sopra una superficie in forma parametrica. *Ann. Scuola Norm. Sup. Pisa* **14**, 47—79 (1948).
 - [3] Condizioni necessarie per la semicontinuità degli integrali sopra una superficie in forma parametrica. *Ann. Mat. Pura Appl.* (4) **29**, 199—224 (1949).
 - [4] An existence theorem of the calculus of variations for integrals on parametric surfaces. *Amer. J. Math.* **74**, 265—292 (1952).
- CONNER, P. E.: [1] The Green's and Neumann's problems for differential forms on Riemannian manifolds. *Proc. Nat. Acad. Sci., U. S. A.*, **40**, 1151—1155 (1954).
- [2] The Neumann's problem for differential forms on Riemannian manifolds. *Mem. Amer. Math. Soc.* no. **20** (1956), 56 pp.
- CORGES, H.: [1] Über die erste Randwertaufgabe bei quasilinearen Differentialgleichungen zweiter Ordnung in mehr als zwei Variablen. *Math. Ann.* **131**, 278—312 (1956).
- [2] Vereinfachter Beweis der Existenz einer a priori Hölder-konstanten. *Math. Ann.* **138**, 155—178 (1959).
 - [3] Zero order a priori estimates for solutions of elliptic differential equations. *Proc. Sympos. Pure Math.* **4**, 157—166, Amer. Math. Soc., Providence, R.I., 1962.
- COURANT, R.: [1] Plateau's problem and Dirichlet's principle. *Ann. of Math.* **38**, 679—724 (1937).
- [2] The existence of minimal surfaces of given topological structure under prescribed boundary conditions. *Acta Math.* **72**, 51—98 (1940).
 - [3] Dirichlet's principle, conformal mapping, and minimal surfaces. Interscience, New York, 1950.
- DANSKIN, J. M.: On the existence of minimizing surfaces in parametric double integral problems in the calculus of variations, *Riv. Mat. Univ. Parma* **3**, 43—63 (1952).
- DEDECKER, P.: Calcul des variations et topologie algébrique, Thèse. Université de Liege, Faculté des Sciences, 1957.
- DE DONDER, T.: Théorie invariantive du calcul des variations. Brussels: Hayez 1935.
- DE GIORGI, E.: [1] Sulla differenziabilità e l'analiticità delle estremali degli integrali multipli regolari, *Mem. Accad. Sci. Torino* **3**, 25—43 (1957).

- DE GIORGI, E.: [2] Frontiere orientate die misura minima. Seminario Mat. Scuola Norm. Pisa, 1960–61.
- DEMERS, M. R., and H. FEDERER: On Lebesgue area, II, Trans. Amer. Math. Soc. **90**, 499–522 (1959).
- DENY, J.: Les potentiels d'énergie fini. Acta Math. **82**, 107–183 (1950).
- DE RHAM, G., and K. KODAIRA: Harmonic integrals (mimeographed notes). Institute for Advanced Study, 1950.
- DOUGLAS, J.: Solution of the problem of Plateau. Trans. Amer. Math. Soc. **33**, 263–321 (1931).
- DOUGLIS, A., and L. NIRENBERG: Interior estimates for elliptic systems of partial differential equations. Comm. Pure Appl. Math. **8**, 503–538 (1955).
- DUFF, G. F. D., and D. C. SPENCER: Harmonic tensors on Riemannian manifolds with boundary, Ann. of Math. **56**, 128–156 (1952).
- EELLS, J., and J. H. SAMPSON: Harmonic mappings of Riemannian manifolds. Amer. J. Math. **86**, 109–160 (1964).
- EILENBERG, S., and N. E. STEENROD: Foundations of Algebraic Topology. Princeton; N. J.: Princeton University Press, 1952.
- EVANS, G. C.: [1] Fundamental points of potential theory. Rice Inst. Pamphlets No. 7. Rice Institute, Houston, Texas, 252–359 (1920).
- [2] Potentials of positive mass, I. Trans. Amer. Math. Soc. **37**, 226–253 (1935).
- FEDERER, H.: [1] On Lebesgue area. Ann. of Math. **61**, 289–353 (1955).
- [2] Currents and area. Trans. Amer. Math. Soc. **98**, 204–233 (1961).
- , and W. H. FLEMING: Normal and integral currents, Ann. of Math. **72**, 458–520 (1960).
- FLEMING, W. H.: [1] Irreducible generalized surfaces. Riv. Mat. Univ. Parma **8**, 251–281 (1957).
- [2] On the oriented Plateau problem. Rend. Circ. Mat. Palermo (2) **11**, 69–90 (1962).
- FLEMING, W. H., and L. C. YOUNG: [1] A generalized notion of boundary, Trans. Amer. Math. Soc. **76**, 457–484 (1954).
- [2] Representation of generalized surfaces as mixtures. Rend. Circ. Mat. Palermo (2) **5**, 117–144 (1956).
- [3] Generalized surfaces with prescribed elementary boundary, Rend. Circ. Mat. Palermo (2) **5**, 320–340 (1956).
- FRIEDMAN, A.: [1] On the regularity of the solutions of non-linear elliptic and parabolic systems of partial differential equations. Jour. Math. Mech. **7**, 43–60 (1958).
- [2] Generalized functions and partial differential equations. Englewood Cliffs, N. J. Prentice Hall Publishing Co.: 1963.
- FRIEDRICHS, K. O.: [1] On the identity of weak and strong extensions of differential operators, Trans. Amer. Math. Soc. **55**, 132–151 (1944).
- [2] On the differentiability of the solutions of linear elliptic equations. Comm. Pure Appl. Math. **6**, 299–326 (1953).
- [3] On differential forms on Riemannian manifolds. Comm. Pure Appl. Math. **8**, 551–558 (1955).
- FUBINI, G.: Il principio di minimo e i teoremi di esistenza per i problemi di contorno relativi alle equazioni alle derivate parziali di ordine pari. Rend. Circ. Mat. Palermo **23**, 58–84 (1907).
- FUNK, P.: Variationsrechnung und ihre Anwendung in Physik und Technik. Berlin · Göttingen · Heidelberg: Springer 1962.
- GAFFNEY, M. P.: [1] The harmonic operator for exterior differential forms. Proc. Nat. Acad. Sci., U.S.A. **37**, 48–50 (1951).

- GAFFNEY, M. P.: [2] The heat equation method of Milgram and Rosenbloom for open Riemannian manifolds. *Ann. of Math.* **60**, 458—466 (1954).
- [3] Hilbert space methods in the theory of harmonic integrals. *Trans. Amer. Math. Soc.* **78**, 426—444 (1955).
- GARABEDIAN, P. R., and D. C. SPENCER: Complex boundary value problems. *Trans. Amer. Math. Soc.* **73**, 223—242 (1952).
- GÅRDING, L.: [1] Dirichlet's problem for linear elliptic partial differential equations. *Math. Scand.* **1**, 55—72 (1953).
- [2] Some trends and problems in linear differential equations. *Proc. Int. Congr. Math.*, 1958.
- GEL'MAN, I. V.: The minimum problem for a non-linear functional, Leningrad Gos. Ped. Inst. Uč. Zap. **166**, 255—263 (1958).
- GEVREY, M.: Démonstration du théorème de Picard-Bernstein par la méthode des contours successifs; prolongement analytique, *Bull. des Sciences Math.*, (2) **50**, 113—128 (1926).
- GILBARG, D.: Boundary value problems for non-linear elliptic equations in n variables. *Proc. Sympos. Non-linear Problems*, Madison, Wis., 1962.
- GOURSAT, E.: Leçons sur l'intégration des équations aux dérivées partielles du premier ordre. Paris: Librairie scientifique J. Hermann, 1921.
- GRAUERT, L.: On Levi's problem and the imbedding of real analytic manifolds, *Ann. of Math.* **68**, 460—472 (1958).
- GRAVES, L. M.: The Weierstrass condition for multiple integral variation problems. *Duke Math. J.* **5**, 656—660 (1939).
- HAAR, A.: Über das Plateausche Problem. *Math. Ann.* **97**, 127—158 (1927).
- HADAMARD, J.: Leçons sur la propagation des ondes. Paris, p. 253 (1903).
- HESTENES, M. R.: Applications of the theory of quadratic forms in Hilbert space to the calculus of variations. *Pacific J. Math.* **1**, 525—581 (1951).
- , and E. J. MCSHANE: Theorem on quadratic forms and its application in the calculus of variations. *Trans. Amer. Math. Soc.* **47**, 501—512 (1940).
- HILBERT, D.: Über das Dirichletsche Prinzip. *Jber. Deutsch. Math. Verein.* **8**, 184—188 (1900).
- HIRSCHFELD, O.: Über eine Transformation von Variations- und Randwertproblemen, S.-B. Berlin, Math. Ges. 110—122, 33. Jahrgang.
- HODGE, W. V. D.: [1] A Dirichlet problem for harmonic functionals with applications to analytic varieties, *Proc. London, Math. Soc.* (2), **36**, 257—303 (1934).
- [2] The theory and applications of harmonic integrals, second edition. Cambridge University Press, 1952.
- HÖLDER, E.: Beweise einiger Ergebnisse aus der Theorie der 2 Variation mehrfacher Extremalintegrale, *Math. Ann.* **148**, 214—225 (1962).
- HOLMGREN, E.: Über Systeme von linearen partiellen Differentialgleichungen. *Öfversigt af kongl. Vetenskaps-Akademiens Förhandlingar* **58**, 91—103 (1901).
- HOPF, E.: [1] Elementare Bemerkungen über die Lösungen partieller Differentialgleichungen zweiter Ordnung von elliptischen Typen, S.-B. Preuss. Akad. Wiss. **19**, 147—152 (1927).
- [2] Zum analytischen Charakter der Lösungen regulärer zwei dimensionaler Variationsprobleme. *Math. Zeit.* **30**, 404—413 (1929).
- [3] Über den Funktionalen, insbesondere den analytischen Charakter der Lösungen elliptischer Differentialgleichungen zweiter Ordnung, *Math. Zeit.* **34**, 194—233 (1932).
- HÖRMANDER, L.: [1] Linear differential operators. Berlin · Göttingen · Heidelberg: Springer 1963.

- HÖRMANDER, L.: [2] L^2 estimates and existence theorems for the $\bar{\partial}$ operator. *Acta Math.* **113**, 89–152 (1965).
- JENKINS, H.: On quasi-linear elliptic equations which arise from variational problems: *J. Math. Mech.* **10**, 705–727 (1961).
- , and J. SERRIN: Variational problems of minimal surfaces type I. *Arch. Rational Mech. Anal.* **12**, 185–212 (1963).
- JOHN, F.: [1] On linear partial differential equations with analytic coefficients. *Comm. Pure Appl. Math.* **2**, 209–253 (1949).
- [2] Derivatives of continuous weak solutions of linear elliptic equations. *Comm. Pure Appl. Math.* **6**, 327–335 (1953).
- [3] Plane waves and spherical means applied to partial differential equations. New York: Interscience Publishers 1955.
- KIPPS, T. C.: The parametric problem for double integrals in the calculus of variations, Univ. of California, Berkeley, Dept. of Math., Tech. Rep. No. 23, ONR Contract Nonr-222 (37).
- KODAIRA, K.: Harmonic fields in Riemannian manifolds. *Ann. of Math.* **50**, 587–665 (1949).
- KOHN, J. J.: [1] Harmonic integrals on strongly pseudoconvex manifolds I. *Annals of Math.* **78**, 112–148 (1963).
- [2] Harmonic integrals on strongly pseudoconvex manifolds II. *Annals of Math.* **79**, 450–472 (1964).
- , and L. NIRENBERG: Non-coercive boundary value problems. *Comm. Pure Appl. Math.* **18**, 443–491 (1965).
- , and D. C. SPENCER: Complex Neumann problems. *Ann. of Math.* **66**, 89–140 (1957).
- LADYZENSKAYA, O. A., and N. URAL'-TSEVA: [1] Quasi-linear elliptic equations and variational problems with many independent variables, Russian Math. Surveys, London Math. Soc. **16**, 17–91 (1961).
- [2] On the smoothness of weak solutions of quasi-linear equations in several variables and of variational problems. *Comm. Pure Appl. Math.* **14**, 481–495 (1961).
- [3] Linear and quasi-linear differential equations of elliptic type, Publishing House “Science”, Moscow, 1964 (Russian).
- LAX, P.: On Cauchy’s problem for hyperbolic equations and the differentiability of the solutions of elliptic equations, *Comm. Pure Appl. Math.* **8**, 615–633 (1955).
- LEBESGUE, H.: [1] Intégrale, longueur, aire (thesis), *Ann. Mat. Pura Appl.* **7**, 231–359 (1902).
- , [2] Sur le problème de Dirichlet, *Ren. Circ. Mat. Palermo* **24**, 371–402 (1907).
- LE PAGE, J. T.: Sur les champs géodesiques des intégrales multiples. *Bull. Acad. Roy. Belg. Cl. Sci. Vs* **27**, 27–46 (1941).
- LERAY, J., and J. L. LIONS: Unpublished.
- LEVI, B.: Sul principio di Dirichlet, *Rend. Circ. Mat. Palermo* **22**, 293–359 (1906).
- LEVI, E. E.: Sulle equazioni lineari totalmente ellittiche alle derivate parziali. *Rend. Palermo* **24**, 275–317 (1907).
- LEWY, H.: [1] Neuer Beweis des Analytischen Charakters der Lösungen elliptischer Differentialgleichungen. *Math. Ann.* **101**, 609–619 (1929).
- [2] On minimal surfaces with partially free boundary. *Comm. Pure Appl. Math.* **4**, 1–13 (1951).
- LICHENSTEIN, L.: [1] Über den analytischen Charakter der Lösungen zweidimensionaler Variationsproblem. *Bull. Acad. Sci. Cracovie, Cl. Sci. Mat. Nat. A*, 915–941 (1912).
- [2] Zur Theorie der konformen Abbildung. Konforme Abbildung nichtanalytischer singuläritätenfreier Flächenstücke auf ebene Gebiete, *Bull. Acad. Sci. Cracovie, Cl. Sci. Mat. Nat. A*, 192–217 (1916).

- LICHTENSTEIN, L.: [3] Neuere Entwicklung der Potentialtheorie, Encyklopädie der mathematischen Wissenschaften. Vol. 2:3:1, pp. 177—377, particularly p. 209 (1918).
- LIONS, J. L.: [1] Théorèmes de traces et d'interpolation I, Ann. Sc. Norm. Pisa **13**, 389—403 (1959).
- [2] Équations différentielles opérationnelles et problèmes aux limites. Berlin · Göttingen · Heidelberg: Springer 1961.
 - , and MAGENES: Problèmes aux limites non homogènes VII. Ann. Mat. Pura Appl. (4) **63**, 201—224 (1963).
- LOPATINSKII, Y. B.: On a method of reducing boundary problems for a system of differential equations of elliptic type to regular equations. Ukrain. Mat. Zurnal **5**, 123—151 (1953).
- MCSHANE, E. J.: [1] On the necessary condition of Weierstrass in the multiple integral problem of the calculus of variations I; Ann. of Math. **32**, 578—590 (1931).
- [2] On the necessary condition of Weierstrass in the multiple integral problem of the calculus of variations, II. Ann. of Math. **32**, 723—733 (1931).
 - [3] On the semi-continuity of double integrals in the calculus of variations. Ann. of Math. **33**, 460—484 (1932).
 - [4] Integrals over surfaces in parametric form, Ann. of Math. **34**, 815—838 (1933).
 - [5] Parametrizations of saddle surfaces with applications to the problem of Plateau. Trans. Amer. Math. Soc. **35**, 718—733 (1934).
- MALGRANGE, B.: Plongement des variétés analytiques réelles, Bull. Soc. Math. France **85**, 101—113 (1957).
- MANDELBROJT, S.: Séries de Fourier et classes quasi-analytique de fonctions: Collection Borel, Paris, 1935.
- MEYERS, N.: Quasi-convexity and lower semicontinuity of multiple variational integrals of any order. Trans. Amer. Math. Soc. **119**, 125—149 (1965).
- MILGRAM, A., and P. ROSENBLUM: [1] Harmonic forms and heat conduction I: Proc. Nat. Acad. Sci. U.S.A. **37**, 180—184 (1951).
- [2] Harmonic forms and heat conduction, II. Proc. Nat. Acad. Sci. U.S.A. **37**, 435—438 (1951).
- MINTY, G. J.: On the solvability of non-linear functional equations of "monotonic" type, Pac. J. Math. **14**, 249—255 (1964).
- MIRANDA, C.: [1] Sui sistemi di tipo ellittico di equazioni lineari a derivate parziali del primo ordine, in n variabili indipendente. Atti Accad. Naz. Lincei. Mem. Cl. Sci. Fis. Mat. Nat. Ser I (8) **3**, 85—121 (1952).
- [2] Equazioni alle derivate parziali di tipo ellittico. Ergeb. der Math. N.F.H. 2 Berlin. Göttingen. Heidelberg. Springer (1955).
- MORREY, C. B., JR.: [1] A class of representations of manifolds, I. Amer. J. Math. **55**, 683—707 (1933).
- [2] A class of representations of manifolds, II. Amer. J. Math. **56**, 275—293 (1934).
 - [3] An analytic characterization of surfaces of finite Lebesgue area, I. Amer. J. Math. **57**, 692—702 (1935).
 - [4] On the solutions of quasi-linear elliptic partial differential equations. Trans. Amer. Math. Soc. **43**, 126—166 (1938).
 - [5] Functions of several variables and absolute continuity II. Duke Math. J. **6**, 187—215 (1940).
 - [6] Existence and differentiability theorems for the solutions of variational problems for multiple integrals. Bull. Amer. Math. Soc. **46**, 439—458 (1940).

- MORREY, C. B., JR.: [7] Multiple integral problems in the calculus of variations and related topics. Univ. of California Publ. in Math., new ser. **1**, 1—130 (1943).
- [8] The problem of Plateau on a Riemannian manifold, Ann. of Math. **49**, 807—851 (1948).
- [9] Quasi-convexity and the lower semicontinuity of multiple integrals. Pacific J. Math. **2**, 25—53 (1952).
- [10] Second order elliptic systems of differential equations. Ann. of Math. Studies No. 33, Princeton Univ. Press, 101—159, 1954.
- [11] A variational method in the theory of harmonic integrals II, Amer. J. Math. **78**, 137—170 (1956).
- [12] On the analyticity of the solutions of analytic non-linear elliptic systems of partial differential equations, I. Amer. Jour. Math. **80**, 198—218, II. 219—234 (1958).
- [13] The analytic embedding of abstract real analytic manifolds, Ann. of Math. **68**, 159—201 (1958).
- [14] Second order elliptic equations in several variables and Hölder continuity. Math. Z. **72**, 146—164 (1959).
- [15] Multiple integral problems in the calculus of variations and related topics. Ann. Scuola Norm. Pisa (III) **14**, 1—61 (1960).
- [16] Existence and differentiability theorems for variational problems for multiple integrals, Partial Differential Equations and Continuum Mechanics. Univ. of Wisconsin Press, Madison, 241—270, 1961.
- [17] The parametric variational problem for double integrals, Comm. Pure Appl. Math. **14**, 569—575 (1961).
- [18] Some recent developments in the theory of partial differential equations, Bull. Amer. Math. Soc. **68**, 279—297 (1962).
- [19] The $\bar{\partial}$ -Neumann problem on strongly pseudo-convex manifolds. Outlines of the Joint Soviet-American Symposium on Partial Differential Equations, Novosibirsk, 171—178 (1963).
- [20] The $\bar{\partial}$ -Neumann problem on strongly pseudo-convex manifolds. Differential Analysis. The Tata Institute, Bombay, 1964.
- [21] The higher dimensional PLATEAU problem on a Riemannian manifold. Proc. Nat. Acad. Sci., U.S.A. **54**, 1029—1035 (1965).
- , and EELLS, JAMES, JR.: A variational method in the theory of harmonic integrals. Ann. of Math. **63**, 91—128 (1956).
- , and L. NIRENBERG: On the analyticity of the solutions of linear elliptic systems of partial differential equations. Comm. Pure Appl. Math. **10**, 271—290 (1957).
- MORSE, A. P.: [1] The behavior of a function on its critical set, Ann. of Math. **40**, 62—70 (1939).
- [2] A theory of covering and differentiation. Trans. Amer. Math. Soc. **55**, 205—235 (1944).
- MORSE, M.: [1] The calculus of variations in the large. Amer. Math. Soc. Colloq. Pub., vol. **18**, New York (1934).
- [2] Functional topology and abstract variational theory. Ann. of Math. **38**, 386—449 (1937).
- [3] Functional topology and abstract variational theory, Mémor. Sci. Math. no. **92** (1939).
- [4] The first variation in minimal surface theory, Duke Math. J. **6**, 263—289 (1940).
- , and C. B. TOMPKINS: [1] Existence of minimal surfaces of general critical type. Ann. of Math. **40**, 443—472 (1939).
- [2] Unstable minimal surfaces of higher topological types, Proc. Nat. Acad. Sci. U.S.A. **26**, 713—716 (1940).

- MORSE, and C. B. TOMPKINS: [3] Minimal surfaces not of minimum type by a new mode of approximation. *Ann. of Math.* **42**, 62–72 (1941).
- [4] Unstable minimal surfaces of higher topological structure. *Duke Math. J.* **8**, 350–375 (1941).
- MOSER, J.: A new proof of De Giorgi's theorem concerning the regularity problem for elliptic differential equations, *Comm. Pure Appl. Math.* **13**, 457–468 (1960).
- NASH, J.: [1] C^1 isometric imbeddings. *Ann. of Math.* **60**, 383–396 (1954).
- [2] The imbedding problem for Riemannian manifolds. *Ann. of Math.* **63**, 20–63 (1956).
- [3] Continuity of the solutions of parabolic and elliptic equations. *Amer. J. Math.* **80**, 931–954 (1958).
- NEWLANDER, A., and L. NIRENBERG: Complex analytic coordinates on almost complex manifolds. *Ann. of Math.* **65**, 391–404 (1957).
- NIKODYM, O.: Sur une classe de fonctions considérées dans l'étude du problème de Dirichlet, *Fund. Math.* **21**, 129–150 (1933).
- NIRENBERG, L.: [1] On nonlinear elliptic partial differential equations and Hölder continuity, *Comm. Pure Appl. Math.* **6**, 103–156 (1953).
- [2] Remarks on strongly elliptic partial differential equations. *Comm. Pure Appl. Math.* **8**, 648–674 (1955).
- [3] On elliptic partial differential equations. *Ann. Scuola Norm. Pisa (III)* **13**, 1–48 (1959).
- PALAIS, R., and S. SMALE: A generalized Morse theory. *Bull. Amer. Math. Soc.* **70**, 165–172 (1964).
- PARS, L.: An introduction to the calculus of variations. London: Heinemann 1962.
- PAUC, C. Y.: La méthode métrique en calcul des variations. Paris: Hermann 1941. Especially p. 54.
- PETROWSKY, I.: Sur l'analyticité des solutions des systèmes d'équations différentielles. *Rec. Math. N. S. Mat. Sbornik* **5** (47), 3–70 (1939).
- RADEMACHER, H.: Über partielle und totale Differenzierbarkeit von Funktionen mehrerer Variablen, und über die Transformation der Doppelintegrale. *Math. Ann.* **79**, 340–359 (1918).
- RADO, T.: [1] Das Hilbertsche Theorem über den analytischen Charakter der Lösungen der partiellen Differentialgleichungen zweiter Ordnung. *Math. Zeit.* **25**, 514–589 (1926).
- [2] Über zweidimensionale reguläre Variationsprobleme. *Math. Ann.* **101**, 620–632 (1929).
- [3] On the problem of least area and the problem of Plateau, *Math. Z.* **32**, 763–796 (1930).
- [4] Length and area, *Amer. Math. Soc. Colloq. Publ.* Vol. 30, Providence, R. I., 1948.
- RADO, T., and P. V. REICHELDERFER: Continuous transformations in analysis. Berlin · Göttingen · Heidelberg: Springer 1955.
- REIFENBERG, E. R.: [1] Solution of the Plateau problem for m -dimensional surfaces of varying topological type. *Acta Math.* **104**, 1–92 (1960).
- [2] An epiperimetric inequality related to the analyticity of minimal surfaces. *Ann. of Math.* **80**, 1–14 (1964).
- [3] On the analyticity of minimal surfaces, *Ann. of Math.* **80**, 15–21 (1964).
- RELLICH, R.: Ein Satz über mittlere Konvergenz, *Nachr. Akad. Wiss. Göttingen, Math.-Phys. Kl.*, 30–35 (1930).
- ROSENBLUM, L. C.: Linear partial differential equations. *Surveys in Applied Math.* **5**, New York, 1958.

- SAKS, S.: Theory of the integral, 2nd revised ed., Eng. translation by L. C. Young. Hafner Pub. Co., New York.
- SCHAUDER, J.: Über lineare elliptische Differentialgleichungen zweiter Ordnung. *Math. Z.* **38**, 257–282 (1934).
- SCHECHTER, M.: On L^p estimates and regularity, *Am. r. J. Math.* **85**, 1–13 (1963).
- SEELEY, R. T.: [1] Singular integrals on compact manifolds. *Amer. J. Math.* **81**, 658–690 (1959).
— [2] Regularisation of singular integral operators on compact manifolds. *Amer. J. Math.* **83**, 265–275 (1961).
— [3] Unpublished.
- SERRIN, J.: [1] On a fundamental theorem of the calculus of variations, etc., *Acta Math.* **102**, 1–32 (1959).
— [2] On the definition and properties of certain variational integrals, *Trans. Amer. Math. Soc.* **101**, 139–167 (1961).
- SHIFFMAN, M.: Differentiability and analyticity of solutions of double integral variational problems. *Ann. of Math.* **48**, 274–284 (1947).
- SHUTRICK, H. B.: Complex extensions: *Quart. J. Math. Oxford, ser. (2)* **9**, 189–201 (1958).
- SIGALOV, A. G.: [1] Regular double integrals of the calculus of variations in non-parametric form. *Doklady Akad. Nauk SSSR* **73**, 891–894 (1950) (Russian).
— [2] Two dimensional problems of the calculus of variations. *Uspehi Mat. Nauk (N. S.)* **6**, 16–101 (1951). *Amer. Math. Soc. Translation No. 83*.
— [3] Two-dimensional problems of the calculus of variations in non-parametric form, transformed into parametric form. *Mat. Sb. N. S.* **38** (**80**), 183–202 (1956). *Amer. Math. Soc. Translations, Ser. 2*, **10**, 319–340 (1958).
- SILVERMAN, E.: Definitions of Lebesgue area for surfaces in metric spaces, *Rivista Mat. Univ. Parma* **2**, 47–76 (1951).
- SMALE, S.: Morse theory and a non-linear generalization of the Dirichlet problem, mimeographed notes. Columbia Univ., New York.
- SOBOLEV, S. L.: [1] On a theorem of functional analysis, *Mat. Sb. (N. S.)* **4**, 471–497 (1938).
— [2] Applications of functional analysis in mathematical physics. *Transl. Math. Mon. Vol 7*, Amer. Math. Soc., Procvidene, R. I., 1963.
- STAMPACCHIA, G.: [1] I problemi al contorno per le equazioni differenziali di tipo ellittico, *Atti VI Congr. Un. Mat. Ital.*, Naples, 21–44 (1959); Edition Cremoneense, Rome, 1960.
— [2] Problemi al contorno ellittici, con dati discontinui, dotati die soluzioni hölderiane. *Ann. Mat. Pura Appl. (IV)* **51**, 1–38 (1960).
— [3] On some regular multiple integral problems in the calculus of variations. *Comm. Pure Appl. Math.* **16**, 383–421 (1963).
- TONELLI, L.: [1] Sui massimi e minimi assoluti del calcolo delle variazioni, *Rend. Circ. Mat. Palermo* **32**, 297–337 (1911).
— [2] Sul caso regolare nel calcolo delle variazioni. *Rend. Circ. Mat. Palermo* **35**, 49–73 (1913).
— [3] Sur une méthode directe du calcul des variations. *Rend. Circ. Mat. Palermo* **39**, 233–264 (1915).
— [4] La semicontinuità nel calcolo delle variazioni. *Rend. Circ. Mat. Palermo* **44**, 167–249 (1920).
— [5] Fondamenti del calcolo delle variazioni, Vols. 1–3, Zanichelli, Bologna.
— [6] Sulla quadratura delle superficie. *Atti Reale Accad. Lincei(6)* **3**, 633–638 (1926).
— [7] Sur la semi-continuité des intégrales double du calcul des variations. *Acta Math.* **53**, 325–346 (1929).

- TONELLI, L.: [8] L'estremo assoluto degli integrali doppi. *Ann. Scuola Norm. Sup. Pisa (2)* **3**, 89–130 (1933).
- VAN HOVE, L.: Sur l'extension de la condition de Legendre du calcul des variations aux intégrales multiples à plusieurs fonctions inconnues. *Nederl. Akad. Wetensch.* **50**, 18–23 (1947).
- VIŠIK, I. M.: Simultaneous quasi-linear elliptic equations with lower order terms. *Doklady Akad. Nauk* **144**, 13–16 (1962).
- , and S. L. SOBOLEV: Nouvelle formulation générale des problèmes aux limites... *Doklady Akad. Nauk* **111**, 521–523 (1956).
- VOLEVICH, L. R.: On the theory of boundary value problems for general elliptic systems. Eng. translation. *Soviet Math.* **4**, 97–100 (1963).
- WEYL, H.: [1] Geodesic fields, *Ann. of Math.* **36**, 607–629 (1935).
— [2] The method of orthogonal projection in potential theory, *Duke Math. J.* **7**, 411–444 (1940).
- WHITNEY, H.: [1] Differentiable manifolds. *Ann. of Math.* **37**, 645–680 (1936).
— [2] Geometric integration theory, Princeton University Press, Princeton, N. J., 1957.
— [3] Elementary structure of real algebraic varieties. *Ann. of Math.* **66**, 545–556 (1957).
—, and F. BRUHAT: Quelques propriétés fondamentales des ensembles analytiques réelles. *Comment. Math. Helv.* **33**, 132–160 (1959).
- YOUNG, L. C.: [1] Some applications of the Dirichlet integral to the theory of surfaces, *Trans. Amer. Math. Soc.* **64**, 317–335 (1948).
— [2] A variational algorithm. *Riv. Mat. Univ. Parma* **5**, 255–268 (1954).
— [3] Generalized surfaces of finite topological type. *Memoirs Amer. Math. Soc.* No. 17 (1955).
— [4] Some new methods in two dimensional variational problems with special reference to minimal surfaces, *Comm. Pure Appl. Math.* **9**, 625–632 (1956).
— [5] Contours on generalized and extremal varieties. *J. Math. Mech.* **11**, 615–646 (1962).
- ZYGMUND, A.: Trigonometrical series. 2nd ed. Chelsea Pub. Co., New York, 1952.