

Bibliography

1. Aoki T. Calcul exponentiel des opérateurs microdifférentiels d'ordre infini. I Ann Inst Fourier (Grenoble). 1983;33:227–50.
2. Brackx F, Delanghe R, Sommen F. Clifford analysis, vol. 76., Research notes in mathematics. Boston: Pitman Advanced Publishing Company; 1982.
3. Dahlberg B. Poisson semigroups and singular integrals. Proc Am Math Soc. 1986;97:41–8.
4. David G. Opérateurs intégraux singuliers sur certaines courbes du plan complexe. Ann Sci École Norm Sup. 1984;17:157–89.
5. David G. Wavelets, Calderón-Zygmund operators, and singular integrals on curves and surfaces. In: Proceedings of the special year on harmonic analysis at Nankai Institute of Mathematics, Tianjin, China, Lecture notes in mathematics. Berlin: Springer.
6. Gaudry G, Qian T. Homogeneous even kernels on surfaces. Math Z. 1994;216:169–77.
7. Gilbert J-E, Murray M. H^p – theory on euclidean space and the dirac operator. Rev Mat Iberoam. 1988;4:253–89.
8. Iftimie V. Fonctions hypercomplexes. Bull Math Soc Sci Math R S. Roumanie(N. S.). 1965;9:279–32.
9. Journé J-L. Calderón-Zygmund operators, Pseudo-Differential operators and the Cauchy integral of Calderón, vol. 994., Lecture notes in mathematics. Berlin: Springer; 1984.
10. Kokilashvili V-M, Kufner A. Fractional integrals on spaces of homogeneous type. Commun Math Univ Carolinae. 1989;30:511–23.
11. Lancker P-V. Clifford analysis on the sphere. PhD thesis, Ghent University; 1996.
12. Long R, Qian T. Clifford martingale Φ -equivalence between $S(f)$ and f^* . Adv Appl Clifford Algebras. 1998;8:95–107.
13. McIntosh A. Clifford algebras, fourier theory, singular integrals, and harmonic functions on Lipschitz domains. In: Ryan J, editor. Clifford algebras in analysis and related topics, Studies in advanced mathematics series. Boca Raton: CRC Press; 1996. p. 33–87.
14. Meyer Y. Ondelettes et opérateurs. II: Opérateurs de Calderón-Zygmund. Hermann, Paris; 1990.
15. Pommerenke C. Boundary behavior of conformal maps. Berlin: Springer; 1992.
16. Qian T, Ryan J. Conformal transformations and Hardy spaces arising in cliffors analysis. J Oper Theory. 1996;35:349–72.
17. Rinehart R. Elements of a theory of intrinsic functions on algebras. Duke Math J. 1965;32:1–19.
18. Ryan J. Some application of conformal covariance in clifford analysis. In: Ryan J, editor. Clifford algebras in analysis and related topics. Boca Raton: CRC Press; 1996. p. 128–55.
19. Ryan J. Dirac operators, conformal transformations and aspects of classical harmonic analysis. J Lie Theory. 1998;8:67–82.
20. Semmes S. A criterion for the boundedness of singular integrals on hypersurfaces. Trans Am Math Soc. 1989;311:501–13.

21. Semmes S. Differentiable function theory on hypersurfaces in \mathbb{R}^n (without bounds on their smoothness). *Indiana Univ Math J.* 1990;39:983–1002.
22. Semmes S. Analysis versus geometry on a class of rectifiable hypersurfaces in \mathbb{R}^n . *Indiana Univ Math J.* 1990;39:1005–35.
23. Semmes S. Chord-arc surfaces with small constant, l^* . *Adv Math.* 1991;85:198–223.
24. Stein E-M. Harmonic analysis: real variable methods, orthogonality, and integrals. Princeton: Princeton University Press; 1993.
25. Stein E-M, Weiss G. Introduction to fourier analysis on euclidean spaces. Princeton: Princeton University Press; 1971.
26. Sudbery A. Quaternionic analysis. *Math Proc Camb Phil Soc.* 1979;85:199–225.
27. Turri T. A proposito degli automorfismi del corpo complesso. *Rend Sem Fac Sci Univ Cagliari.* 1947;17:88–94.
28. Yosida K. Functional analysis. Berlin: Springer; 1965.

Index

Symbols

ω type operator, 8, 14

B

basis vector, 67

C

Calderón-Zygmund operator, 41

Cauchy, 41

 Cauchy–Dunford bounded holomorphic functional calculus, 287

 Cauchy–Dunford integral, 287, 288

 Cauchy integral, 206

 Cauchy integral formula, 69

 Cauchy integral operator, 41, 286

 Cauchy–Kovalevska expansion, 258

 Cauchy–Szegő kernel, 277

 Photogenic-Cauchy transform, 222

Clifford algebra, 67

convolution, 2

D

dual, 9

 dual pair, 9

 dual pair of type ω operators, 10, 11

E

Euclidean norm, 68

F

Fourier, 48

 Fourier coefficient, 48, 51

 Fourier multiplier, 64

 Fourier transform, 100

 inverse Fourier transform, 101

Fueter theorem, 100

functional calculus, 201

 bounded holomorphic functional calculus, 201, 287

 Cauchy–Dunford bounded holomorphic functional calculus, 287

G

Gegenbaur polynomial, 255

H

Hardy, 58

 Hardy–Littlewood maximal function, 58

 Hardy–Sobolev space, 270

 Hardy space $H^{p_0}(\Delta)$, 195

 left-Hardy space, 195

Hilbert transform, 208

 inner Hilbert transform, 208

 outer Hilbert transform, 208, 209

I

inner starlike region, 225

intrinsic, 101

 intrinsic function, 101, 102, 169, 170, 173, 240, 249, 250

 intrinsic set, 101, 102, 169, 170, 173–175, 239, 240

inverse, 68

 inverse Fourier transform, 50, 239

 inverse Fourier transform formula, 44

K

Kelvin inversion, 100

L

Lipschitz, 1

Lipschitz curve, v, 2, 41

Lipschitz function, 2, 27

Lipschitz graph, 1

Lipschitz perturbation, vi

starlike Lipschitz curve, 44, 62

M

monogenic, 69

left monogenic, 69

right-monogenic, 69

O

outer starlike region, 225

P

Parseval's identity, 44, 50, 51, 82

Photogenic, 221

Photogenic-Cauchy transform, 221

Photogenic-Dirac equation, 222

Plemelj type formula, 194, 292

Poisson, 212

conjugate inner Poisson kernel, 212

conjugate outer Poisson kernel, 213

inner Poisson kernel, 212, 213

outer Poisson kernel, 213

the Poisson summation formula, 48

Q

quadratic estimate, 10–12

R

radial Dirac operator, 276

reverse quadratic estimate, 12, 13, 23

S

sector, 3, 28, 226

closed double sector, 3

half sector, 46