

# Bibliography

- [1] W. AMBROSE AND I. M. SINGER, A theorem on holonomy, *Trans. Amer. Math. Soc.* **75** (3) (1953), 428-443.
- [2] P. BAGUIS AND M. CAHEN, A construction of symplectic connections through reduction, *Lett. Math. Phys.* **57** (2001), 149-160.
- [3] C. A. BERENSTEIN AND E. C. TARABUSI, Inversion formulas for the  $k$ -dimensional Radon transform in real hyperbolic spaces, *Duke Math. J.* **62** (3) (1991), 613-631.
- [4] M. BERGER, Les espaces symétriques non compacts, *Ann. Sci. Éc. Norm. Supér.* **74** (2) (1957), 85-177.
- [5] A. L. BESSE, *Einstein manifolds*, Ergeb. Math. Grenzgeb. **10**, Springer-Verlag, Berlin Heidelberg, 1987.
- [6] P. BIELIAVSKY, *Espaces symétriques symplectiques*, thèse de doctorat, Université libre de Bruxelles, Bruxelles, 1995.
- [7] P. BIELIAVSKY, M. CAHEN AND S. GUTT, Symmetric symplectic manifolds and deformation quantization, in *Modern Group Theoretical Methods in Physics*, J. BERTRAND, M. FLATO, J. P. GAZEAU, M. IRAC-ASTAUD AND D. STERNHEIMER (ed.), *Math. Phys. Stud.* **18**, Springer, Dordrecht (1995), 63-75.
- [8] A. BOUAZIZ, Formule d'inversion des intégrales orbitales sur les groupes de Lie réductifs, *J. Funct. Anal.* **134** (1994), 100-182.
- [9] H. W. BRINKMANN, Einstein spaces which are mapped conformally on each other, *Math. Ann.* **94** (1) (1925), 119-145.
- [10] M. CAHEN, T. GROUY AND S. GUTT, A possible symplectic framework for Radon-type transforms, *Int. J. Geom. Methods Mod. Phys.* **13** (Supp. 1) (2016), 1641002.
- [11] M. CAHEN, S. GUTT AND J. RAWNSLEY, Symmetric Symplectic Spaces with Ricci-type curvature, in *Conférence Moshé Flato 2 (1999)*, G. DIRO AND D. STERNHEIMER (ed.), *Math. Phys. Stud.* **22**, Springer, Dordrecht (2000), 81-91.
- [12] M. CAHEN, S. GUTT AND L. SCHWACHHÖFER, Construction of Ricci-type connections by reduction and induction, in *The Breadth of Symplectic and Poisson Geometry*, J. E. MARSDEN AND T. S. Ratiu (ed.), *Progr. Math.* **232**, Birkhäuser, Boston (2005), 41-57.

- [13] M. CAHEN, J. LEROY, M. PARKER, F. TRICERI AND L. VANHECKE, Lorentz manifolds modelled on a Lorentz symmetric space, *J. Geom. Phys.* **7** (4) (1990), 571-581.
- [14] M. CAHEN AND M. PARKER, Sur des classes d'espace pseudo-Riemanniens symétrique, *Bull. Soc. Math. Belg.* **22** (1970), 339-354.
- [15] M. CAHEN AND M. PARKER, *Pseudo-Riemannian symmetric spaces*, Mem. Amer. Math. Soc. **24** (229), Amer. Math. Soc., Providence, Rhode Island, 1980.
- [16] M. CAHEN AND N. WALLACH, Lorentzian symmetric spaces, *Bull. Amer. Math. Soc.* **76** (3) (1970), 585 - 591.
- [17] E. CARTAN, *Sur la structure des groupes de transformations finis et continus*, thèse de doctorat, Paris, Nony, 1894.
- [18] E. CARTAN, Les groupes réels simples finis et continus, *Ann. Sci. Éc. Norm. Supér.* **31** (1914), 263-355.
- [19] E. CARTAN, Sur une classe remarquable d'espaces de Riemann I, *Bull. Soc. Math. France* **54** (1926), 214-264.
- [20] E. CARTAN, Sur une classe remarquable d'espaces de Riemann II, *Bull. Soc. Math. France* **55** (1926), 114-134.
- [21] E. CARTAN, Sur certaines formes riemanniennes remarquables des géometries à groupe fondamental simple, *Ann. Sci. Éc. Norm. Supér.* **44** (1927), 345-467.
- [22] A. M. CORMACK, Representation of a function by its line integrals, with some radiological applications I, II, *J. Appl. Phys.* **34** (1963), 2722 - 2727, **35** (1964), 2908-2912.
- [23] I.P. COSTA E SILVA, J. L. FLORES AND J. HERRERA, Rigidity of geodesic completeness in the Brinkmann class of gravitational wave spacetimes, *Adv. Theor. Math. Phys.* **22** (1) (2018), 25-45.
- [24] G. DE RHAM, Sur la réductibilité d'un espace de Riemann, *Comment. Math. Helv.* **26** (1952), 328-344.
- [25] G. VAN DIJK, Harmonic analysis on rank one symmetric spaces, in *Conformal Groups and Related Symmetries Physical Results and Mathematical Background*, A. O. BARUT AND H. D. DOEBNER (ed.), Lecture Notes in Phys. **261**, Springer, Berlin Heidelberg (1986), 244-252.
- [26] G. VAN DIJK AND M. POEL, The Plancherel formula for the pseudo-Riemannian space  $\mathrm{SL}(n, \mathbb{R})/\mathrm{GL}(n-1, \mathbb{R})$ , *Compos. Math.* **58** (3) (1986), 371-397.
- [27] A. J. DI SCALA AND C. OLMO, The geometry of homogeneous submanifolds of hyperbolic space, *Math. Z.* **237** (2001), 199–209.
- [28] J. EHLERS AND W. KUNDT, Exact solutions of the gravitational field equations, in *Gravitation: An Introduction to Current Research*, L. WITTEN (ed.), John Wiley & Sons, New York (1962), 49-101.

- [29] J. FARAUT, Distributions sphériques sur les espaces hyperboliques, *J. Math. Pures Appl.* **58** (1979), 369-444.
- [30] P. FUNK, Über Flächen mit lauter geschlossenen geodätischen Linien, *Math. Ann.* **74** (1913), 278–300.
- [31] I. M. GELFAND AND M. I. GRAEV, Analogue of the Plancherel formula for the classical groups, *Trudy Moscov. Mat. Obshch.* **4** (1955), 375-404.
- [32] I. M. GELFAND AND M. A. NAIMARK, An analog of Plancherel formula for the complex unimodular group, *Dokl. Akad. Nauk USSR* **63** (1948), 609-612.
- [33] P. HARINCK AND N. JACQUET, Distributions propres invariantes sur la paire symétrique  $(\mathfrak{gl}(4, \mathbb{R}), \mathfrak{gl}(2, \mathbb{R}) \times \mathfrak{gl}(2, \mathbb{R}))$ , *J. Funct. Anal.* **261** (9) (2011), 2362-2436.
- [34] HARISH-CHANDRA, Plancherel formula for complex semisimple Lie groups, *Proc. Nat. Acad. Sci. U.S.A.* **37** (1951), 813-818.
- [35] HARISH-CHANDRA, A formula for semisimple Lie groups, *Proc. Nat. Acad. Sci. USA* **42** (1956), 538-540.
- [36] HARISH-CHANDRA, Spherical functions on a semi-simple Lie group I, *Amer. J. Math.* **80** (1958), 241-310.
- [37] HARISH-CHANDRA, Spherical functions on a semisimple Lie group II, *Amer. J. Math.* **80** (1958), 553-613.
- [38] S. HELGASON, Differential Operators on homogeneous spaces, *Acta Math.* **102** (1959), 239-299.
- [39] S. HELGASON, *Differential Geometry and Symmetric Spaces*, Academic Press, New York, 1962.
- [40] S. HELGASON, The Radon transform on Euclidean spaces, compact two-point homogeneous spaces and Grassmann manifolds, *Acta Math.* **113** (1) (1965), 153-180.
- [41] S. HELGASON, Radon-Fourier transforms on symmetric spaces and related group representations, *Bull. Amer. Math. Soc.* **71** (1965), 757-763.
- [42] S. HELGASON, A duality in integral geometry on symmetric spaces, in *Proceedings of the United States-Japan Seminar in Differential Geometry, Kyoto, Japan, 1965*, K. DAIGAKU AND S. K. KENKYUJO (ed.), Nippon Hyorosha, Tokyo (1966), 37-56.
- [43] S. HELGASON, A duality for symmetric spaces with applications to group representations, *Adv. Math.* **5** (1970), 1-154.
- [44] S. HELGASON, *Groups and Geometric Analysis : Integral Geometry, Invariant Differential Operators, and Spherical Functions*, Academic Press, New York, 1984.
- [45] S. HELGASON, The totally geodesic Radon transform on constant curvature spaces, *Contemp. Math.* **113** (1990), 141-149.

- [46] S. HELGASON, *Geometric Analysis on Symmetric Spaces*, Math. Surveys Monogr. **39**, Amer. Math. Soc., Providence, Rhode Island, 1994.
- [47] S. HELGASON, *Integral Geometry and Radon Transforms*, Springer-Verlag, New York, 2010.
- [48] H. HOPF, Zum Clifford-Kleinschen Raumproblem, *Math. Ann.* **95** (1) (1926), 313-339.
- [49] G. N. HOUNSFIELD, Computerized transverse axial scanning tomography, *British J. Radiol.* **46** (1973), 1016-1022.
- [50] F. JOHN, *Plane Waves and Spherical Means*, Wiley-Interscience, New York, 1955.
- [51] W. KILLING, Die Zusammensetzung der stetigen endlichen Transformationsgruppen I, II, III, IV, *Math. Ann.* **31** (1888), 252-290; **33** (1889), 1-48; **34** (1889), 57-122; **36** (1890), 161-189.
- [52] W. KILLING, Über die Clifford-Klein'schen Raumformen, *Math. Ann.* **39** (1891), 257-278.
- [53] S. KOH, On Affine Symmetric Spaces, *Trans. Amer. Math. Soc.* **119** (2) (1965), 291-309.
- [54] M. T. KOSTERS AND G. VAN DIJK, Spherical Distributions on the Pseudo-Riemannian Space  $\mathrm{SL}(n, \mathbb{R})/\mathrm{GL}(n-1, \mathbb{R})$ , *J. Funct. Anal.* **68** (1986), 168-213.
- [55] A. KURUSA, The totally geodesic Radon transform on the Lorentz space of curvature  $-1$ , *Duke Math. J.* **86** (3) (1997), 565-583.
- [56] J. LEPOWSKY AND G. W. MCCOLLUM, Cartan subspaces of symmetric Lie algebras, *Trans. Amer. Math. Soc.* **216** (1976), 217 - 228.
- [57] O. LOOS, *Symmetric spaces I, II*, W. A. Benjamin, New York, 1969.
- [58] S. MANCINI, V. I. MAN'KO AND P. TOMBESI, Symplectic tomography as classical approach to quantum systems, *Phys. Lett. A* **213** (1-2) (1996), 1-6.
- [59] G. MARMO, P. W. MICHOR AND Y. A. NERETIN, The Lagrangian Radon transform and the Weil representation, *J. Fourier Anal. Appl.* **20** (2) (2014), 321-361.
- [60] P.-D. METHÉE, Sur les distributions invariantes dans le groupe des rotations de Lorentz, *Comment. Math. Helv.* **28** (1954), 225-269.
- [61] T. NAGANO, Homogeneous sphere bundles and the isotropic Riemannian manifolds, *Nagoya Math. J.* **15** (1959), 29-55.
- [62] T. NEUKIRCHNER, Solvable pseudo-Riemannian symmetric spaces, arXiv preprint arXiv:math/0301326 (2003).
- [63] K. NOMIZU, Invariant Affine Connections on Homogeneous Spaces, *Amer. J. Math.* **76** (1) (1954), 33-65.

- [64] J. ORLOFF, Orbital integrals on symmetric spaces, in *Non-Commutative Harmonic Analysis and Lie Groups*, J. CARMONA, P. DELORME AND M. VERGNE (ed.), Lecture Notes in Math. **1243**, Springer-Verlag, Berlin New York (1987), 198-219.
- [65] R. S. PALAIS, A global formulation of the Lie theory of transformation groups, *Mem. Amer. Math. Soc.* **22** (1957).
- [66] M. PARKER, *Espaces symétriques pseudo-riemanniens réductibles, à holonomie linéaire non-semi-simple et non nilpotente*, thèse de doctorat, Université libre de Bruxelles, Bruxelles, 1973.
- [67] J. RADON, Über die Bestimmung von Funktionen durch ihre Integralwerte längs gewisser Mannigfaltigkeiten, *Ber. Verh. Sächs. Akad. Wiss. Leipzig. Math. Nat. Kl.* **69** (1917), 262-277.
- [68] M. RIESZ, L'intégrale de Riemann-Liouville et le problème de Cauchy, *Acta Math.* **81** (1) (1949), 1-223.
- [69] F. ROUVIÈRE, Inverting Radon transforms : the group-theoretic approach, *Enseign. Math.* **47** (2001), 205-252.
- [70] A. TENGSTRAND, Distributions Invariant under an Orthogonal Group of Arbitrary Signature, *Math. Scand.* **8** (1960), 201-218.
- [71] J. TITS, Sur certains classes d'espaces homogènes de groupes de Lie, *Acad. Roy. Belg. Cl. Sci. Mém. Collect.* **29** (3) (1955).
- [72] I. VAISMAN, Symplectic Curvature Tensors, *Monatsh. Math.* **100** (1985), 299-327.
- [73] H. C. WANG, Two-point homogeneous spaces, *Ann. of Math.* **55** (1952), 177-191.
- [74] J. A. WOLF, *Spaces of Constant Curvature*, McGraw-Hill, New York, 1967.
- [75] H. WU, On the de Rham decomposition theorem, *Illinois J. Math.* **8** (1964), 291-311.