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REFERENCES

- [1] ACZEL, J. *Lectures on functional equations and their applications*. Academic Press, New York, 1966.
- [2] BARGMANN, V. Irreducible unitary representations of the Lorentz group. *Ann. of Math.* 48 (1947), 568-640.
- [3] BARUT, A. O. and E. C. PHILLIPS. Matrix elements of representations of non-compact groups in a continuous basis. *Comm. Math. Phys.* 8 (1968), 52-65.
- [4] BOERNER, H. *Representations of groups*. North-Holland Publishing Co., Amsterdam, 1970.
- [B] BRUHAT, F. Sur les représentations induites des groupes de Lie. *Bull. Soc. Math. France* 84 (1956), 97-205.
- [6] DEANS, S. R. A unified Radon inversion formula. *J. Math. Phys.* 19 (1978), 2346-2349.
- [7] ——— Gegenbauer transforms via the Radon transform. *SIAM J. Math. Anal.* 10 (1979), 577-585.
- [8] DIXMIER, J. Sur les représentations de certains groupes orthogonaux. *C. R. Acad. Sci. Paris* 250 (1960), 3263-3265.
- [9] DIJK, G. VAN. The irreducible unitary representations of $SL(2, \mathbf{R})$. Ch. XIII in "Representations of locally compact groups with applications" (T. H. Koornwinder, ed.), MC Syllabus 38, Math. Centrum, Amsterdam, 1979.
- [10] ERDÉLYI, A., W. MAGNUS, F. OBERHETTINGER and F. G. TRICOMI. *Higher transcendental functions*, Vol. I. McGraw-Hill, New York, 1953.
- [11] ——— *Tables of integral transforms*. Vol. II. McGraw-Hill, New York, 1954.
- [12] FARAUT, J. *Analyse harmonique sur les espaces Riemanniens symétriques de rang un*. Ecole d'été « Analyse harmonique », CIMPA, Université de Nancy I, 1980.
- [17] FELL, J. M. G. Non-unitary dual spaces of groups. *Acta Math.* 114 (1965), 267-310.
- [14] FLENSTED-JENSEN, M. Paley-Wiener type theorems for a differential operator connected with symmetric spaces. *Ark. Mat.* 10 (1972), 143-162.
- [15] ——— and T. H. KOORNWINDER. Positive definite spherical functions on a non-compact, rank one symmetric space. pp. 249-282 in "Analyse harmonique sur les groupes de Lie, II" (P. Eymard, J. Faraut, G. Schiffmann and R. Takahashi, eds.), Lecture Notes in Math. 739, Springer-Verlag, Berlin, 1979.
- [16] GANGOLLI, R. On the Plancherel formula and the Paley-Wiener theorem for spherical functions on semisimple Lie groups. *Ann. of Math.* (2) 93 (1971), 150-165.
- [17] GELFAND, I. M., M. I. GRAEV and N. J. VILENKIN. *Generalized functions*, Vol. 5, *Integral geometry and its connection to the theory of group representations*. Academic Press, New York, 1968.
- [18] GELFAND, I. M. and M. A. NAIMARK. Unitary representations of the Lorentz group (in Russian). *Izv. Akad. Nauk. SSSR, Ser. Mat.*, 11 (1947), 411-504.
- [19] GODEMENT, R. A theory of spherical functions, I. *Trans. Amer. Math. Soc.* 73 (1952), 496-556.
- [20] ——— Introduction aux travaux de A. Selberg. *Séminaire Bourbaki*, Exposé 144, Paris, 1957.
- [21] HARISH-CHANDRA. Representations of a semisimple Lie group on a Banach space, I. *Trans. Amer. Math. Soc.* 75 (1953), 185-243.
- [22] ——— Representations of semisimple Lie groups, II. *Trans. Amer. Math. Soc.* 76 (1954), 26-65.
- [23] ——— Spherical functions on a semi-simple Lie group, I. *Amer. J. Math.* 80 (1958), 241-310.

- [24] — Spherical functions on a semisimple Lie group, II. *Amer. J. Math.* 80 (1958), 553-613.
- [25] HELGASON, S. *Differential geometry and symmetric spaces*. Academic Press, New York, 1962.
- [26] KOORNWINDER, T. H. A new proof of a Paley-Wiener type theorem for the Jacobi transform. *Ark. Mat.* 13 (1975), 145-159.
- [27] — *The representation theory of $SL(2, \mathbf{R})$, a global approach*. Math. Centrum Report ZW 145, Amsterdam, 1980.
- [28] KOSTERS, M. T. *A study of the representations of $SL(2, \mathbf{C})$ using non-infinitesimal methods*. Math. Centrum Report TW 190, Amsterdam, 1979.
- [29] LEPOWSKY, J. Algebraic results on representations of semisimple Lie groups. *Trans. Amer. Math. Soc.* 176 (1973), 1-57.
- [30] MATSUSHITA, O. The Plancherel formula for the universal covering group of $SL(2, \mathbf{R})$. *Sc. Papers College of Gen. Ed. Univ. Tokyo* 29 (1979), 105-123.
- [31] MAUTNER, F. I. Review of reference [22]. *Math. Reviews* 15 (1954), p. 398.
- [32] MILLER, W., Jr. *Lie theory and special functions*. Academic Press, New York, 1968.
- [33] NAIMARK, M. A. On the linear representations of the proper Lorentz group, (in Russian). *Dokl. Akad. Nauk. (N.S.)* 97 (1954), 969-972.
- [34] — *Les représentations linéaires du groupe de Lorentz*. Dunod, Paris, 1962 (French translation of Russian edition, Moscow, 1958).
- [35] POULSEN, N. S. On C^∞ -vectors and intertwining bilinear forms for representations of Lie groups. *J. Functional Anal.* 9 (1972), 87-120.
- [36] SCHMID, W. Representations of semisimple Lie groups. pp. 185-235, in: *Representation theory of Lie groups*, (M. Atiyah e.a.), Cambridge University Press, Cambridge, 1979.
- [37] SCHWARZ, G. W. Smooth functions invariant under the action of a compact Lie group. *Topology* 14 (1975), 63-68.
- [38] SPRINKHUIZEN-KUYPER, I. G. A fractional integral operator corresponding to negative powers of a certain second order differential operator. *J. Math. Anal. Appl.* 72 (1979), 674-702.
- [39] TAKAHASHI, R. Sur les fonctions sphériques et la formule de Plancherel dans le groupe hyperbolique. *Japan. J. Math.* 31 (1961), 55-90.
- [40] — Sur les représentations unitaires des groupes de Lorentz généralisés. *Bull. Soc. Math. France* 91 (1963), 289-433.
- [41] — Quelques résultats sur l'analyse harmonique dans l'espace symétrique non-compact de rang 1 du type exceptionnel. pp. 511-567, in: "*Analyse harmonique sur les groupes de Lie, II*" (P. Eymard, J. Faraut, G. Schiffmann and R. Takahashi, eds.). Lecture Notes in Math. 739, Springer-Verlag, Berlin, 1979.
- [42] — $SL(2, \mathbf{R})$. Ecole d'été, *Analyse harmonique*. CIMPA, Université de Nancy I, 1980.
- [43] VILENKIN, N. J. *Special functions and the theory of group representations*. Amer. Math. Soc. Transl. of Math. Monographs, Vol. 22, Providence, R.I., 1968. (English translation of Russian edition, Moscow, 1965).
- [44] WALLACH, N. R. Cyclic vectors and irreducibility for principal series representations, II. *Trans. Amer. Math. Soc.* 164 (1972), 389-396.
- [45] — *Harmonic analysis on homogeneous spaces*. Marcel Dekker, New York, 1973.
- [46] — On the Selberg trace formula in the case of compact quotient. *Bull. Amer. Math. Soc.* 82 (1976), 171-195.
- [47] — Representations of semisimple Lie groups and Lie algebras. pp. 154-246, in: *Lie theories and their applications*, (A. J. Coleman and P. Ribenboim, eds.). Queen's Papers in Pure and Applied Math., Queen's University, Kingston, Ontario, 1978.

- [48] WARNER, G. *Harmonic analysis on semi-simple Lie groups*, Vol. I. Springer-Verlag, Berlin, 1972.
- [49] ——— *Harmonic analysis on semi-simple Lie groups*, Vol. II. Springer-Verlag, Berlin, 1972.
- [50] WHITNEY, H. Differentiable even functions. *Duke Math. J.* 10 (1943), 159-160.
- [51] ZELOBENKO, D. P. and M. A. NAIMARK. A characterization of completely irreducible representations of a semisimple complex Lie group. *Soviet Math. Dokl.* 7 (1966), 1403-1406.

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