

References

- [1] L. Amour, L. Jager, and J. Nourrigat, [Lower bounds for pseudodifferential operators with a radial symbol](#). *J. Math. Pures Appl.* (9) **103** (2015), no. 5, 1157–1162
- [2] R. Askey and G. Gasper, [Positive Jacobi polynomial sums. II](#). *Amer. J. Math.* **98** (1976), no. 3, 709–737
- [3] A. Boulkhemair, [L² estimates for Weyl quantization](#). *J. Funct. Anal.* **165** (1999), no. 1, 173–204
- [4] A. J. Bracken, H.-D. Doebner, and J. G. Wood, [Bounds on integrals of the Wigner function](#). *Phys. Rev. Lett.* **83** (1999), no. 19, 3758–3761
- [5] V. S. Buslaev, [Quantization and the WKB method](#). *Trudy Mat. Inst. Steklov.* **110** (1970), 5–28
- [6] B. Delourme, T. Duyckaerts, and N. Lerner, [On integrals over a convex set of the Wigner distribution](#). *J. Fourier Anal. Appl.* **26** (2020), no. 1, article no. 6, 40 pp.
- [7] A. Erdélyi, [On Some Expansions in Laguerre Polynomials](#). *J. London Math. Soc.* **13** (1938), no. 2, 154–156
- [8] C. Fefferman, [The uncertainty principle](#). *Bull. Amer. Math. Soc. (N.S.)* **9** (1983), no. 2, 129–206
- [9] C. Fefferman and D. H. Phong, [On positivity of pseudo-differential operators](#). *Proc. Nat. Acad. Sci. U.S.A.* **75** (1978), no. 10, 4673–4674
- [10] H. G. Feichtinger, [On a new Segal algebra](#). *Monatsh. Math.* **92** (1981), no. 4, 269–289
- [11] H. G. Feichtinger and T. Strohmer (eds.), [Advances in Gabor analysis](#). Appl. Numer. Harmon. Anal. XVIII, Birkhäuser, Basel, 2003
- [12] E. Feldheim, [Développments en série de polynomes d’Hermite et de Laguerre à l’aide des transformations de Gauss et de Henkel. III](#). *Nederl. Akad. Wetensch., Proc.* **43** (1940), 379–386
- [13] P. Flandrin, [Maximum signal energy concentration in a time-frequency domain](#). In *International conference on acoustics, speech, and signal processing (ICASSP)*, pp. 2176–2179, 4, IEEE, New York, 1988
- [14] P. Flandrin, [Time-frequency/time-scale analysis](#). Wavelet Anal. Appl. 10, Academic Press, San Diego, CA, 1999
- [15] G. B. Folland, [Harmonic analysis in phase space](#). Ann. of Math. Stud. 122, Princeton University Press, Princeton, NJ, 1989
- [16] K. Gröchenig, [Foundations of time-frequency analysis](#). Appl. Numer. Harmon. Anal., Birkhäuser, Boston, MA, 2001
- [17] K. Gröchenig, P. Jaming, and E. Malinnikova, [Zeros of the Wigner distribution and the short-time Fourier transform](#). *Rev. Mat. Complut.* **33** (2020), 723–744
- [18] K. Gröchenig and M. Leinert, [Wiener’s lemma for twisted convolution and Gabor frames](#). *J. Amer. Math. Soc.* **17** (2004), no. 1, 1–18

- [19] A. Grossmann, *Parity operator and quantization of δ -functions*. *Comm. Math. Phys.* **48** (1976), no. 3, 191–194
- [20] F. Hlawatsch and P. Flandrin, The interference structure of the Wigner distribution and related time-frequency signal representations. In *The Wigner distribution*, pp. 59–133, Elsevier, Amsterdam, 1997
- [21] L. Hörmander, *Pseudo-differential operators and non-elliptic boundary problems*. *Ann. of Math. (2)* **83** (1966), 129–209
- [22] L. Hörmander, *Symplectic classification of quadratic forms, and general Mehler formulas*. *Math. Z.* **219** (1995), no. 3, 413–449
- [23] L. Hörmander, *The analysis of linear partial differential operators. I*. Classics Math., Springer, Berlin, 2003
- [24] L. Hörmander, *The analysis of linear partial differential operators. III*. Classics Math., Springer, Berlin, 2007
- [25] K. Husimi, *Some formal properties of the density matrix*. *Proc. Phys. Math. Soc. Jpn.* **22** (1940), 264–314
- [26] M. S. Jakobsen, *On a (no longer) new Segal algebra: a review of the Feichtinger algebra*. *J. Fourier Anal. Appl.* **24** (2018), no. 6, 1579–1660
- [27] A. J. E. M. Janssen, Positivity and spread of bilinear time-frequency distributions. In *The Wigner distribution*, pp. 1–58, Elsevier, Amsterdam, 1997
- [28] P. D. Lax and L. Nirenberg, A sharp inequality for pseudo-differential and difference operators. In *Singular Integrals (Proc. Sympos. Pure Math., Chicago, Ill., 1966)*, pp. 213–217, American Mathematical Society, Providence, RI, 1967
- [29] N. N. Lebedev, *Special functions and their applications*. Revised English edition. Translated and edited by Richard A. Silverman, Prentice-Hall, Englewood Cliffs, NJ, 1965
- [30] J. Leray, Analyse Lagrangienne et mécanique quantique. In *Séminaire sur les Équations aux Dérivées Partielles (1976–1977)*, I, Exp. no. 1, 303 pp., Collège de France, Paris, 1977
- [31] J. Leray, *Lagrangian analysis and quantum mechanics*. MIT Press, Cambridge, 1981
- [32] J. Leray, *The meaning of Maslov's asymptotic method: the need of Planck's constant in mathematics*. *Bull. Amer. Math. Soc. (N.S.)* **5** (1981), no. 1, 15–27
- [33] N. Lerner, *Metrics on the phase space and non-selfadjoint pseudo-differential operators*. Pseudo-Differential Operators. Theory and Applications 3, Birkhäuser, Basel, 2010
- [34] N. Lerner, *A course on integration theory*. Birkhäuser/Springer, Basel, 2014
- [35] N. Lerner, Fonctions classiques. 2017, lecture notes, Sorbonne Université, <https://webusers.imj-prg.fr/~nicolas.lerner/classique-m1-lerner.pdf>, visited on 1 March 2024
- [36] N. Lerner, *Mehler's formula and functional calculus*. *Sci. China Math.* **62** (2019), no. 6, 1143–1166
- [37] E. H. Lieb, *Integral bounds for radar ambiguity functions and Wigner distributions*. *J. Math. Phys.* **31** (1990), no. 3, 594–599

- [38] E. H. Lieb, *The stability of matter: from atoms to stars*. 4th edn., Springer, Berlin, 2005
- [39] E. H. Lieb and Y. Ostrover, *Localization of multidimensional Wigner distributions*. *J. Math. Phys.* **51** (2010), no. 10, article no. 102101, 6 pp.
- [40] S.-J. Liu, S.-D. Lin, H.-C. Lu, and H. Srivastava, *Linearization of the products of the generalized Lauricella polynomials and the multivariate Laguerre polynomials via their integral representations*. *Studia Sci. Math. Hungar.* **50** (2013), no. 3, 373–391
- [41] S. Mallat, *A wavelet tour of signal processing*. Academic Press, San Diego, CA, 1998
- [42] K. Pravda-Starov, *Generalized Mehler formula for time-dependent non-selfadjoint quadratic operators and propagation of singularities*. *Math. Ann.* **372** (2018), no. 3-4, 1335–1382
- [43] H. Reiter, *Metaplectic groups and Segal algebras*. Lecture Notes in Math. 1382, Springer, Berlin, 1989
- [44] H. Reiter and J. D. Stegeman, *Classical harmonic analysis and locally compact groups*. 2nd edn., London Math. Soc. Monogr. (N.S.) 22, The Clarendon Press, Oxford University Press, New York, 2000
- [45] R. T. Rockafellar, *Convex analysis*. Princeton Math. Ser. 28, Princeton University Press, Princeton, NJ, 1970
- [46] A. Royer, *Wigner function as the expectation value of a parity operator*. *Phys. Rev. A (3)* **15** (1977), no. 2, 449–450
- [47] M. Shubin, *Pseudodifferential operators and spectral theory*. 2nd edn., Springer, Berlin, 2001
- [48] J. Sjöstrand, Wiener type algebras of pseudodifferential operators. In *Séminaire sur les Équations aux Dérivées Partielles, 1994–1995*, Exp. no. IV, 21 pp., École Polytechnique, Palaiseau, 1995
- [49] A. Smirnov, *Tables of Airy functions and special confluent hypergeometric functions for asymptotic solutions of differential equations of the second order*. Pergamon Press, New York-Oxford-London-Paris, 1960
- [50] A. Unterberger, *Oscillateur harmonique et opérateurs pseudo-différentiels*. *Ann. Inst. Fourier (Grenoble)* **29** (1979), no. 3, 201–221
- [51] O. Vallée and M. Soares, *Airy functions and applications to physics*. 2nd edn., Imperial College Press, London, 2010
- [52] A. Weil, *Sur certains groupes d’opérateurs unitaires*. *Acta Math.* **111** (1964), 143–211
- [53] H. Weyl, *Gruppentheorie und Quantenmechanik*. 2nd edn., Wissenschaftliche Buchgesellschaft, Darmstadt, 1977
- [54] E. P. Wigner, *The collected works of Eugene Paul Wigner. Part A. The scientific papers. Vol. IV*. Springer, Berlin, 1997
- [55] J. Wood and A. Bracken, *Bounds on integrals of the Wigner function: the hyperbolic case*. *J. Math. Phys.* **46** (2005), no. 4, article no. 042103, 14 pp.