

# List of Publications

M. Hoffmann-Ostenhof

61. Analytic structure of solutions to multiconfiguration equations, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *J. Phys. A* 42 (2009), no 31, 315208, 11pp.
60. Analytic structure of many-body Coulombic Wave functions, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Commun. Math. Phys.* 289 (1), (2009), 291 - 310
59. Third Derivative of the One-Electron Density at the Nucleus, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Ann. Henri Poincaré* 9 (7), (2008), 1387 - 1412
58. Many-particle Hardy inequalities, with T. Hoffmann-Ostenhof, A. Laptev, J. Tidblom, *J. London Math. Soc. (2)* 77, (2008), 99 - 114
57. Positivity of the spherically averaged atomic one-electron density, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Math. Z.* 259, (2008), 123 - 130
56. Local and global properties of eigenfunctions and one-electron densities of Coulombic Schrödinger operators, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *AIP Conf. Proc. Vol. 998 (2008)'Quantum Few-Body Systems'*, Aarhus, Denmark (19 – 20 March 2007)
55. Non-isotropic cusp conditions and regularity of the electron density of molecules at the nuclei, with, S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Ann. Henri Poincaré* 8 (4), (2007), 731 – 748
54. Regularity properties of molecular eigenfunctions and densities, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Oberwolfach Report, Mathematical and Numerical Aspects of Quantum Chemistry Problems*, (2006)
53. Sharp regularity results for Coulombic many-electron wave functions, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Commun. Math. Phys.*, 255 (2005), 183 - 227
52. Analyticity of the density of electronic wave functions, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Ark. Math.* 42 (2004) , 87-100
51. Analyticity of the density of electronic wave functions, with S. Fournais, T. Hoffmann-Ostenhof, T. Ostergaard Sorensen, *Institut Mittag-Leffler, Report* 7, (2002/3)

50. On the regularity of the density of electronic wave functions, with T. Hoffmann-Ostenhof, S. Fournais, T. Ostergaard Sorensen, Contemporary Math. 307 (2002), 143-148
49. The electron density is smooth away from the nuclei, with T. Hoffmann-Ostenhof, S. Fournais, T. Ostergaard Sorensen, Commun. Math. Phys. 228 (2002) 401-415
48. A geometric version of Hardy's inequality, with T. Hoffmann-Ostenhof, A. Laptev, Journal Funct. Anal. 189 (2002), 539-548
47. Spectral theory for the Dihedral Group, with T. Hoffmann-Ostenhof, B. Helffer, N. Nadirashvili, Geom. Funct. Analysis, GAFA Geom. Funct. Analysis 12 (2002), 989-1017
46. Electron wave functions and densities for atoms, with T. Hoffmann-Ostenhof, T. Ostergaard-Sorensen, Ann. Henri Poincaré 2 (1) (2001), 77-100
45. Nodal sets, multiplicity and superconductivity in non simply connected domains, with B. Helffer, T. Hoffmann-Ostenhof, M. Owen, LN in Physics 62 Springer (2000), 63-84
44. Critical sets of solutions to elliptic equations, with R. Hardt, T. Hoffmann-Ostenhof and N. Nadirashvili, J. Diff. Geometry, 51 (1999), 359-373
43. Nodal sets for groundstates of Schrödinger operators with zero magnetic field in non simply connected domains, with B. Helffer, T. Hoffmann-Ostenhof and M. Owen, Commun. Math. Phys. 202 (1999), 629-649
42. On the multiplicity of eigenvalues of the Laplacian on surfaces, with T. Hoffmann-Ostenhof and N. Nadirashvili, Ann. Global Analysis, Geom. 17 (1999), 43-48
41. On the nodal line conjecture, with T. Hoffmann-Ostenhof and N. Nadirashvili, Contemporary Math. 217 (1998), 33-48
40. The nodal line of the second eigenfunction of the Laplacian in  $\mathbb{R}^2$  can be closed, with T. Hoffmann-Ostenhof and N. Nadirashvili, Duke Math. J. 90 (1997), 631-640
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38. On some properties of zero sets and critical sets of solutions to elliptic equations, with T. Hoffmann-Ostenhof and N. Nadirashvili, Centre de Recherches Mathematiques, CRM Proceedings and Lecture Notes, 12 (1997), 167-177
37. Interior Hölder estimates for solutions of Schrödinger equations and the regularity of nodal sets, with T. Hoffmann-Ostenhof and N. Nadirashvili, Commun. PDE 20 (1995), 1241-1273

36. Interior Hölder estimates for solutions of Schrödinger equations and the regularity of nodal sets, with T. Hoffmann-Ostenhof and N. Nadirashvili, Journées „Equationes aux dérivées partielles“, Saint-Jean-de-Monts 30. Mai au 3. Juin 1994, XIII, 1-9, Groupement de Recherche CNRS n<sup>o</sup> 1151
35. Regularity on the nodal sets of solutions to Schrödinger equations, with T. Hoffmann-Ostenhof and N. Nadirashvili, „Mathematical results in Quantum Mechanics“, Int. Conf. in Blossin (Germany), May 17-21, 1993, Ed. By M. Demuth et. Al., p. 19-25, Operator Theory: Advances and Appl. Vol. 70, Birkhäuser, Basel 1994
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33. Electronic wave functions near coalescence points, with T. Hoffmann-Ostenhof and H. Stremnitzer, Phys. Rev. Letters 68 (1992), 3857-3860
32. Local properties of solutions of Schrödinger equations, with T. Hoffmann-Ostenhof, Commun. PDE 17, (1992) 491-522
31. Bounds on the order of vanishing of eigenfunctions of Schrödinger operators, with T. Hoffmann-Ostenhof, „Rigorous Results in Quantum Dynamics“, ed. By J. Dittrich and P. Exner, World Scientific Publ. 1991, S. 37-40
30. On nodes of local solutions to Schrödinger equations, with T. Hoffmann-Ostenhof, LN in Pure and Appl. Math., Vol. 133, Differential Equations with applications in biology, physics and engineering, Marcel Dekker, INC. (1991), 201-208
29. On the local behaviour of nodes of solutions of Schrödinger equations in dimensions  $\geq 3$ , with T. Hoffmann-Ostenhof, Commun. PDE 15 (4), 435-451 (1990)
28. On the asymptotic decay of  $L^2$ -solutions of one-body Schrödinger equations in unbounded domains, Proc. Royal Soc. Edinburgh 11A, 65-86 (1990)
27. Asymptotic properties of nodes of solutions to Schrödinger equations, with T. Hoffmann-Ostenhof, Symposium „Partial Differential Equations“, Holzgau (DDR) 1988, Teubner Texte zur Mathematik, Bd. 112, 157-162, Teubner, Leipzig 1989
26. On the asymptotics of nodes of  $L^2$ -solutions of Schrödinger equations in dimensions  $\geq 3$ , with T. Hoffmann-Ostenhof, Commun. Math. Phys., 117, 49-77 (1988)
25. Asymptotics of the nodal lines of solutions of 2-dimensional Schrödinger equations, Math. Z. 198, 161-179 (1988)
24. Asymptotics and continuity properties near infinity of solutions of Schrödinger equations in exterior domains, with T. Hoffmann-Ostenhof, J. Swetina, Ann. Inst. H. Poincaré, Vol. 46, no 3, 247-280 (1987)
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22. Pointwise bounds on the asymptotics of spherically averaged  $L^2$ -solutions of one-body Schrödinger operators, with T. Hoffmann-Ostenhof, J. Swetina, Ann. Inst. H. Poincaré, Vol. 42, no 4, 341-361 (1985)
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18. A multiparticle Coulomb system with bound state at threshold, with T. Hoffmann-Ostenhof, B. Simon, J. Phys. A16, 1125-1131 (1983)
17. On the absence of positive eigenvalues for one-body Schrödinger operators, with R. Froese, I. Herbst, T. Hoffmann-Ostenhof, J. d'Anal. 41, 272-284 (1982)
16.  $L^2$ -exponential lower bounds to solutions of the Schrödinger equations, with R. Froese, I. Herbst, T. Hoffmann-Ostenhof, Commun. Math. Phys. 87, 265-286 (1982)
15. Cusp conditions of eigenfunctions of  $n$ -electron systems, with R. Seiler, Phys. Rev. A23, 21-23 (1981)
14. Bound on the decay of electron densities with screening, with R. Ahlrichs, T. Hoffmann-Ostenhof, J. D. Morgan III, Phys. Rev. A23, 2106-2117 (1981)
13. Asymptotics of atomic ground states: The relation between the ground state of helium and the ground state of  $He^+$ , with J. Combes, T. Hoffmann-Ostenhof, J. Math. Phys. 22, 1299 -1305 (1981)
12. On the exponential fall off wave functions and electron densities, with T. Hoffmann-Ostenhof, R. Ahlrichs, J. D. Morgan III, LN in Physics 116, p. 62-67, Springer 1980
11. Brownian motion and a consequence of Harnack's inequality: nodes of quantum wave function, with T. Hoffmann-Ostenhof, B. Simon, Proc. Am. Math. Soc. 80, 301-305 (1980)
10. On the nodal structure of atomic eigenfunctions, with T. Hoffmann-Ostenhof, B. Simon, J. Phys. A13, 1131-1133 (1980)
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7. Simple bounds to the atomic one-electron density at the nucleus and to expectation values of one-electron operators, with T. Hoffmann-Ostenhof, W. Thirring, J. Phys. B11, L571-L575 (1978)
6. Bounds to expectation values and exponentially decreasing upper bounds to the one-electron density of atoms, with T. Hoffmann-Ostenhof, J. Phys. B11, 17-24 (1978)
5. „Schrödinger inequalities“ and asymptotic behavior of the electron density of atoms and molecules, with T. Hoffmann-Ostenhof, Phys. Rev. A16, 1782-1785 (1977)
4. Exponentially decreasing upper bounds to the electron density of atoms, with T. Hoffmann-Ostenhof, Phys. Lett. 59A, 373-374 (1976)
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