

## BIBLIOGRAPHY

- [ABB<sup>+</sup>99] E. ANDERSON, Z. BAI, C. BISCHOF, S. BLACKFORD, J. DEMMEL, J. DON-GARRA, J. DU CROZ, A. GREENBAUM, S. HAMMARLING, A. MCKENNEY, and D. SORENSEN, *LAPACK Users' Guide*, third ed., Society for Industrial and Applied Mathematics, Philadelphia, PA, 1999, <http://www.netlib.org/lapack/>.
- [AMX<sup>+</sup>87] R. ANHOLT, W. E. MEYERHOF, X.-Y. XU, H. GOULD, B. FEINBERG, R. J. McDONALD, H. E. WEGNER, and P. THIEBERGER, *Atomic collisions with relativistic heavy ions. VIII. Charge-state studies of relativistic uranium ions*, Phys. Rev. A (1987), 1586–1600.
- [AS65] M. Abramowitz and I. A. Stegun (eds.), *Handbook of Mathematical Functions*, Dover Publications, New York, 1965.
- [BB88] C. A. BERTULANI and G. BAUR, *Electromagnetic processes in relativistic heavy ion collisions*, Phys. Rep. **163** (1988), 299–408.
- [BCD<sup>+</sup>98] A. BELKACEM, N. CLAYTOR, T. DINNEEN, B. FEINBERG, and H. GOULD, *Electron capture from pair production by Au<sup>79+</sup> at 10.8 GeV/nucleon*, Phys. Rev. A **58** (1998), 1253–1255.
- [BD66] J. D. BJORKEN and S. D. DRELL, *Relativistische Quantenmechanik*, BI Wissenschaftsverlag, Mannheim, 1966.
- [BEC88] A. D. BECKE, *A multicenter numerical integration scheme for polyatomic molecules*, J. Chem. Phys. **88** (1988), 2547–2553.
- [BGF<sup>+</sup>93] A. BELKACEM, H. GOULD, B. FEINBERG, R. BOSSINGHAM, and W. E. MEYERHOF, *Measurement of electron capture from electron-positron pair production in heavy ion collisions*, Phys. Rev. Lett. **71** (1993), 1514–1517.
- [BGF<sup>+</sup>94] A. BELKACEM, H. GOULD, B. FEINBERG, R. BOSSINGHAM, and W. E. MEYERHOF, *Projectile energy and atomic number dependence of electron capture from pair production in relativistic atomic collisions*, Phys. Rev. Lett. **73** (1994), 2432–2435.
- [BGF<sup>+</sup>97] A. BELKACEM, H. GOULD, B. FEINBERG, R. BOSSINGHAM, and W. E. MEYERHOF, *Capture, ionization, and pair-production processes in relativistic heavy-ion collisions in the 1-GeV/nucleon range*, Phys. Rev. A **56** (1997), 2806–2818.
- [BH63] W. BRENIG and R. HAAG, *General quantum theory of collision processes*, Quantum Scattering Theory (M. Ross, ed.), Indiana University Press, Bloomington, 1963, (first published in German in: Fortschr. Physik **7**, 183–242 (1959), pp. 13–108).
- [BLP82] V. B. BERESTETSKII, E. M. LIFSHITZ, and L. P. PITAEVSKII, *Quantum Electrodynamics*, 2nd ed., Landau and Lifshitz, Course of Theoretical Physics, Vol. 4, Pergamon Press, Oxford, 1982.
- [BM92] B. H. BRANSDEN and M. R. C. McDOWELL, *Charge Exchange and the Theory of Ion-Atom Collisions*, International Series of Monographs on Physics, no. 82, Clarendon Press, Oxford, 1992.
- [BRBW93] A. J. BALTZ, M. R. RHODES-BROWN, and J. WENESER, *Bound-electron-positron pair production in relativistic heavy-ion collisions*, Phys. Rev. A **47** (1993), 3444–3447.
- [BRBW94] A. J. BALTZ, M. R. RHODES-BROWN, and J. WENESER, *Convergence of bound-electron-positron pair production calculations for relativistic heavy-ion collisions*, Phys. Rev. A **50** (1994), 4842–4853.
- [BRBW96] A. J. BALTZ, M. J. RHOADES-BROWN, and J. WENESER, *Heavy-ion partial beam lifetimes due to Coulomb induced processes*, Phys. Rev. E **54** (1996), 4233–4239.
- [BS77] H. A. Bethe and E. E. Salpeter (eds.), *Quantum Mechanics of One- and Two-Electron Atoms*, Plenum Publishing Corporation, New York, 1977.
- [BS85] H.-J. BÄR and G. SOFF, *Relativistic wave packets and delta-electron emission*, Physica **128C** (1985), 225–242.

- [BS89] C. BOTTCHER and M. R. STRAYER, *Electron pair production from pulsed electromagnetic fields in relativistic heavy-ion collisions*, Phys. Rev. A **39** (1989), 1330–1341.
- [CAP69] A. Z. CAPRI, *Electron in a given time-dependent electromagnetic field*, J. Math. Phys. **10** (1969), 575–580.
- [CBD<sup>+</sup>97] N. CLAYTOR, A. BELKACEM, T. DINNEEN, B. FEINBERG, and H. GOULD, *Ionization of Au<sup>78+</sup> and electron capture by Au<sup>79+</sup> at 10.8 GeV/nucleon*, Phys. Rev. A **55** (1997), R842–R845.
- [CEL] *Cern program library cernlib*, CERN: European Laboratory for Particle Physics, Information Technology Division, Geneva, <http://cern.ch/cernlib/>.
- [CL55] E. A. CODDINGTON and N. LEVINSON, *Theory of Ordinary Differential Equations*, McGraw-Hill, New York, 1955.
- [Coo57] J. M. COOK, *Convergence to the Møller wave-matrix*, Journ. Math. and Phys. **26** (1957), 82–87.
- [CSC<sup>+</sup>97] J. R. CAREY, S. G. SHASHARINA, J. C. CUMMINGS, J. V. W. REYNERS, and P. J. HINKER, *Comparison of C++ and Fortran 90 for object-oriented scientific programming*, Comput. Phys. Commun. **105** (1997), 20–36.
- [DAS93] A. DAS, *The Special Theory of Relativity: A Mathematical Exposition*, Universitext, Springer, New York, 1993.
- [DAV65] A. S. DAVYDOV, *Quantum Mechanics*, Pergamon Press, Oxford, 1965.
- [DEL96] B. DELLEY, *High order integration schemes on the unit sphere*, J. Comput. Chem. **17** (1996), 1152–1155.
- [DH93] P. DEUFLHARD and A. HOHMANN, *Numerische Mathematik I*, Walter de Gruyter, Berlin, 1993.
- [DOL64] J. D. DOLLARD, *Asymptotic convergence and the Coulomb interaction*, J. Math. Phys. **5** (1964), 729–738.
- [DR75] P. J. DAVIS and P. RABINOWITZ, *Methods of Numerical Integration*, Computer Science and Applied Mathematics, Academic Press, New York, 1975.
- [DV66] J. D. DOLLARD and G. VELO, *Asymptotic behaviour of a Dirac particle in a Coulomb field*, Nuov. Cim. **A 45** (1966), 801–812.
- [ED96] J. EICHLER and D. P. DEWANGAN, *Asymptotic cross section for pair production in relativistic atomic collisions*, Unpublished (Hahn-Meitner-Institut Berlin), January 1996.
- [EDM57] A. R. Edmonds (ed.), *Angular Momentum in Quantum Mechanics*, Princeton University Press, Princeton, 1957.
- [EIC85] J. EICHLER, *Relativistic eikonal theory of electron capture*, Phys. Rev. A **32** (1985), 112–121.
- [EIC87] J. EICHLER, *Theory of relativistic charge exchange with Coulomb boundary conditions*, Phys. Rev. A **35** (1987), 3248–3255, (Erratum: PR A 37, 287 (1988)).
- [EIC90] J. EICHLER, *Theory of relativistic ion-atom collisions*, Phys. Rep. **193** (1990), 165–277.
- [EIC95] J. EICHLER, *Charge transfer from the negative-energy continuum: Alternative mechanism for pair production in relativistic atomic collisions*, Phys. Rev. Lett. **75** (1995), 3653–3656.
- [EM95] J. EICHLER and W. E. MEYERHOF, *Relativistic Atomic Collisions*, Academic Press, San Diego, 1995.
- [FGS91] E. S. FRADKIN, D. M. GITMAN, and S. M. SHVARTSMAN, *Quantum Electrodynamics with Unstable Vacuum*, Springer Series in Nuclear and Particle Physics, Springer, New York, 1991.
- [FL92] W. FISCHER and I. LIEB, *Funktionentheorie*, Vieweg, Braunschweig, 1992.
- [FOR84] O. FORSTER, *Analysis 3: Integralrechnung im  $\mathbb{R}^n$  mit Anwendungen*, 3rd ed., Vieweg Verlag, Braunschweig, 1984.
- [FRI] W. FRITSCH, private communication.
- [FRI90] H. FRIEDRICH, *Theoretische Atomphysik*, Springer-Verlag, Berlin, 1990.

- [GLS99] W. GROPP, E. LUSK, and A. SKJELLM, *Using MPI: Portable Parallel Programming with the Message-Passing Interface*, second edition ed., Scientific and Engineering Computation, MIT Press, Cambridge, Massachusetts, 1999.
- [GMR85] W. GREINER, B. MÜLLER, and J. RAFELSKI, *Quantum Electrodynamics of Strong Fields*, Texts and Monographs in Physics, Springer-Verlag, Berlin, 1985.
- [GMS<sup>+</sup>97] N. GRÜN, C. MÜLLER, W. SCHEID, T. STEIH, and R. TENZER, *Electron-positron pair production in atomic relativistic heavy ion collisions*, Nuclear Physics at the Turn of the Millennium: Structure of Vacuum and Elementary Matter (Singapore), World Scientific, 1997, pp. 117–124.
- [GOO55] R. H. GOOD, JR., *Properties of Dirac matrices*, Rev. Mod. Phys. **27** (1955), 187–211.
- [GRA90] G. M. GRAF, *Phase space analysis of the charge transfer model*, Helv. Phys. Acta **63** (1990), 107–138.
- [GV96] G. H. GOLUB and C. F. VAN LOAN, *Matrix Computations*, 3rd ed., The John Hopkins University Press, Baltimore, 1996.
- [HAG82] G. A. HAGEDORN, *Asymptotic completeness for the impact parameter approximation to three particle scattering*, Ann. Inst. H. Poincaré, Phys. Théor. **36** (1982), 19–40.
- [HH89] G. HÄMMERLIN and K.-H. HOFFMANN, *Numerische Mathematik*, Grundwissen Mathematik, vol. 7, Springer-Verlag, 1989.
- [HÖR76] L. HÖRMANDER, *The existence of wave operators in scattering theory*, Math. Z. **146** (1976), 69–91.
- [IB99] D. C. IONESCU and A. BELKACEM, *Dynamics of ionization mechanisms in relativistic collisions involving heavy and highly charged ions*, Preprint, September 30, 1999, Lawrence Berkeley National Laboratory, California 94720, 1999.
- [IE96] D. C. IONESCU and J. EICHLER, *Bound-free electron-positron pair creation in relativistic heavy-ion collisions as a charge transfer process*, Phys. Rev. A **54** (1996), 4960–4967.
- [ION97] D. C. IONESCU, *Elektromagnetische Elektron-Positron-Paarerzeugung in relativistischen Schwerionstößen*, Habilitationsschrift, Fachbereich Physik, Freie Universität Berlin, 1997.
- [ISE93] A. ICHIHARA, T. SHIRAI, and J. EICHLER, *Cross sections for electron capture in relativistic atomic collisions*, At. Data Nucl. Data Tables **55** (1993), 63–79.
- [ITO95] H. T. ITO, *Charge transfer model and three-body scattering*, J. Math. Phys. **36** (1995), 115–132.
- [JAC99] J. D. JACKSON, *Classical Electrodynamics*, 3rd ed., John Wiley & Sons, 1999.
- [KAT80] T. KATO, *Perturbation Theory for Linear Operators*, 2nd ed., Springer-Verlag, Berlin, 1980.
- [KVD<sup>+</sup>98] H. F. KRAUSE, C. R. VANE, S. DATZ, P. GRAFSTRÖM, H. KNUDSEN, C. SCHEIDENBERGER, and R. H. SCHUCH, *Electron capture and ionization of Pb ions at 33 TeV*, Phys. Rev. Lett. **80** (1998), 1190–1193.
- [KVD<sup>+</sup>01] H. F. KRAUSE, C. R. VANE, S. DATZ, P. GRAFSTRÖM, H. KNUDSEN, U. MIKKELSEN, C. SCHEIDENBERGER, R. H. SCHUCH, and Z. VILAKAZI, *Electron capture and ionization of 33-TeV Pb ions in gas targets*, Phys. Rev. A **63** (2001), 032711–1–5.
- [KY91] T. KATO and K. YAJIMA, *Dirac equation with moving nuclei*, Ann. Inst. H. Poincaré, Phys. Théor. **54** (1991), 209–221.
- [LL86] L. D. LANDAU and E. M. LIFSHITZ, *Quantenmechanik*, 9 ed., Lehrbuch der Theoretischen Physik, vol. 3, Akademie-Verlag Berlin, Berlin, 1986.
- [MAE<sup>+</sup>85] W. E. MEYERHOF, R. ANHOLT, J. EICHLER, H. GOULD, C. MUNGER, J. ALONSO, P. THIEBERGER, and H. E. WEGNER, *Atomic collisions with relativistic heavy ions. III. Electron capture*, Phys. Rev. A **32** (1985), 3291–3301.
- [MBS95] K. MOMBERGER, A. BELKACEM, and A. H. SØRENSEN, *Non-perturbative momentum space approach to relativistic heavy-ion collisions*, Europhys. Lett. **32** (1995), 401–406.

- [MBS96] K. MÖMBERGER, A. BELKACEM, and A. H. SØRENSEN, *Numerical treatment of the time-dependent Dirac equation in momentum space for atomic processes in heavy-ion collisions*, Phys. Rev. A **53** (1996), 1605–1622.
- [MGS91] K. MÖMBERGER, N. GRÜN, and W. SCHEID, *Coupled channel analysis of electron-positron pair production in relativistic heavy ion collisions*, Z. Phys. D **18** (1991), 133–137.
- [MGS98] C. MÜLLER, N. GRÜN, and W. SCHEID, *Finite element formulation of the Dirac equation and the problem of fermion doubling*, Phys. Lett. A **242** (1998), 245–250.
- [MOK94] P. H. MOKLER, *Reiche Ernte für die Atomphysik, Klare Sicht auf die Struktur höchstgeladener, schwerer Ionen — Ergebnisse vom Schwerionenspeicherring ESR*, Phys. Bl. **50** (1994), 145–147.
- [MPI96] *Message passing interface (MPI)*, <http://www mpi-forum.org/>, 1995–1996.
- [MPI00] *MPICH: A portable implementation of MPI*, <http://www.mcs.anl.gov/mpi/mpich/>, Argonne National Laboratory, Mathematics and Computer Science Division, Argonne, 2000.
- [MPS98] P. J. MOHR, G. PLUNIEN, and G. SOFF, *QED corrections in heavy atoms*, Phys. Rep. **293** (1998), 228–369.
- [MRG73] B. MÜLLER, J. RAFELSKI, and W. GREINER, *Electron wave functions in over-critical electrostatic potentials*, Nuov. Cim. **18A** (1973), 551–573.
- [MS88] P. MOON and D. E. SPENCER, *Field theory handbook*, corrected 3rd printing, 2nd ed., Springer, Berlin, 1988.
- [MT00] P. J. MOHR and B. N. TAYLOR, *CODATA recommended values of the fundamental physical constants: 1998*, Rev. Mod. Phys. **72** (2000), 351–495.
- [NEW82] R. G. NEWTON, *Scattering Theory of Waves and Particles*, 2nd ed., Texts and Monographs in Physics, Springer-Verlag, New York, 1982.
- [NW98] J. W. NORBURY and M. L. WALDSMITH, *Heavy ion beam lifetimes at relativistic and ultrarelativistic colliders*, Phys. Rev. C **57** (1998), 1525–1527.
- [PJB94] J. M. PÉREZ-JORDÁ and A. D. BECKE, *Automatic numerical integration techniques for polyatomic molecules*, J. Chem. Phys. **100** (1994), 6520–6534.
- [Poz00] R. POZO, *Template numerical toolkit: A numeric library for scientific computing in C++*, <http://math.nist.gov/tnt/>, National Institute of Standards and Technology, Gaithersburg, 1996–2000.
- [PTVF92] W. H. PRESS, S. A. TEUKOLSKY, W. T. VETTERLING, and B. P. FLANNERY, *Numerical Recipes: The Art of Scientific Computing*, 2nd ed., Cambridge University Press, Cambridge, 1992.
- [REG96] Regionales Rechenzentrum für Niedersachsen/Universität Hannover, Hannover, *Die Programmiersprache C. Ein Nachschlagewerk*, 8th ed., 1996.
- [RMS<sup>+</sup>91] K. RUMRICH, K. MÖMBERGER, G. SOFF, W. GREINER, N. GRÜN, and W. SCHEID, *Nonperturbative character of electron-positron pair production in relativistic heavy-ion collisions*, Phys. Rev. Lett. **20** (1991), 2613–2616.
- [Ros61] M. E. ROSE, *Relativistic Electron Theory*, Wiley, New York, 1961.
- [RS75] M. REED and B. SIMON, *Fourier Analysis, Self-Adjointness*, Methods of Modern Mathematical Physics, vol. 2, Academic Press, San Diego, 1975.
- [RS79] M. REED and B. SIMON, *Scattering Theory*, Methods of Modern Mathematical Physics, vol. 3, Academic Press, San Diego, 1979.
- [RS80] M. REED and B. SIMON, *Functional Analysis*, 2nd ed., Methods of Modern Mathematical Physics, vol. 1, Academic Press, San Diego, 1980.
- [RSG93] K. RUMRICH, G. SOFF, and W. GREINER, *Ionization and pair creation in relativistic heavy-ion collisions*, Phys. Rev. A **47** (1993), 215–228.
- [RUD74] W. RUDIN, *Functional Analysis*, Tata McGraw-Hill, New Delhi, 1974.
- [RUI77A] S. N. M. RUIJSENAARS, *Charged particles in external fields. I. Classical theory*, J. Math. Phys. **18** (1977), 720–737.

- [RUI77B] S. N. M. RUISENAARS, *Charged particles in external fields. II. The quantized Dirac and Klein-Gordon theories*, Commun. Math. Phys. **52** (1977), 267–294.
- [RUI77C] S. N. M. RUISENAARS, *On Bogoliubov transformations for systems of relativistic charged particles*, J. Math. Phys. **18** (1977), 517–526.
- [SAK67] J. J. SAKURAI, *Advanced Quantum Mechanics*, Addison-Wesley, Reading (Massachusetts), 1967.
- [SAN72] W. SANDHAS, *The three-body problem*, Elementary Particle Physics, Multiparticle Aspects (Wien) (P. Urban, ed.), Acta Physica Austriaca, vol. Suppl. IX, Springer-Verlag, 1972, Proceedings of the XI. Internationale Universitätswochen für Kernphysik, Schladming, pp. 57–138.
- [SAN74] W. SANDHAS, *The n-body problem*, Progress in Particle Physics (Wien) (P. Urban, ed.), Acta Physica Austriaca, vol. Suppl. XIII, Springer-Verlag, 1974, Proceedings of the XIII. Internationale Universitätswochen für Kernphysik, Schladming, pp. 679–710.
- [SCH55] L. I. SCHIFF, *Quantum Mechanics*, 2 ed., McGraw-Hill, New York, 1955.
- [SCH58] J. SCHWINGER (ed.), *Quantum Electrodynamics*, Dover, New York, 1958.
- [SCH95] G. SCHARF, *Finite Quantum Electrodynamics*, 2nd ed., Texts and Monographs in Physics, Springer-Verlag, Berlin, 1995.
- [SEI72] R. SEILER, *Quantum theory of particles with spin zero and one half in external fields*, Commun. Math. Phys. **25** (1972), 127–151.
- [SFVW95A] F. SALVAT, J. M. FERNÁNDEZ-VAREA, and W. WILLIAMSON JR., *Accurate numerical solution of the radial Schrödinger and Dirac wave equations*, Comput. Phys. Commun. **90** (1995), 151–168.
- [SFVW95B] F. SALVAT, J. M. FERNÁNDEZ-VAREA, and W. WILLIAMSON JR., *Radial: A Fortran subroutine package for the solution of the radial Schrödinger and Dirac wave equations*, CPC Program Library, Belfast, <http://www.cpc.cs.qub.ac.uk/>, catalogue number ADBP, 1995, (see also [SFVW95A]).
- [SM53] A. SALAM and P. T. MATHEWS, *Fredholm theory of scattering in a given time-dependent field*, Phys. Rev. **90** (1953), 690–695.
- [SM91] F. SALVAT and R. MAYOL, *Accurate numerical solution of the Schrödinger and Dirac wave equations for central fields*, Comput. Phys. Commun. **62** (1991), 65–79.
- [STÖ] T. STÖHLKER, private communication.
- [STR97] B. STROUstrup, *The C++ Programming Language*, 3rd ed., Addison-Wesley, Reading, Massachusetts, 1997.
- [TBM<sup>+</sup>92] J. THIEL, A. BUNKER, K. MOMBERGER, N. GRÜN, and W. SCHEID, *Electron-positron pair creation with capture and ionisation in relativistic heavy-ion collisions by the finite-difference method*, Phys. Rev. A **46** (1992), 2607–2612.
- [TE88A] N. TOSHIMA and J. EICHLER, *Coupled-channel theory of excitation and charge transfer in relativistic atomic collisions*, Phys. Rev. A **38** (1988), 2305–2316.
- [TE88B] N. TOSHIMA and J. EICHLER, *Coupled-channels treatment of excitation and charge transfer in  $U^{92+} + U^{91+}$  collisions at 1 and 0.5 GeV/u*, Phys. Rev. Lett. **60** (1988), 573–576.
- [TE89] N. TOSHIMA and J. EICHLER, *Relativistic coupled-channel calculations including pseudostates*, Phys. Rev. A **40** (1989), 125–132.
- [TE90] N. TOSHIMA and J. EICHLER, *Direct reactions in relativistic atomic collisions and the influence of the Coulomb boundary conditions*, Phys. Rev. A **42** (1990), 3896–3900.
- [TEL87] E. TELLER, *Remarks about fields of high intensity*, Nucl. Inst. Meth. **B24/25** (1987), 1–2.
- [THA92] B. THALLER, *The Dirac Equation*, Texts and Monographs in Physics, Springer-Verlag, Berlin, 1992.
- [THGS95] J. THIEL, J. HOFFSTADT, N. GRÜN, and W. SCHEID, *Fermionic and bosonic coupled channel calculations in momentum space for electron-positron pair creation in relativistic heavy-ion collisions*, Z. Phys. D **34** (1995), 21–28.

- [THI88] W. THIRRING, *Klassische Dynamische Systeme*, 2nd ed., Lehrbuch der Mathematischen Physik, vol. 1, Springer-Verlag, Wien, 1988.
- [THI90] W. THIRRING, *Klassische Feldtheorie*, 2nd ed., Lehrbuch der Mathematischen Physik, vol. 2, Springer-Verlag, Wien, 1990.
- [THI94] W. THIRRING, *Quantenmechanik von Atomen und Molekülen*, 2nd ed., Lehrbuch der Mathematischen Physik, vol. 3, Springer-Verlag, Wien, 1994.
- [VGS93] M. VIDOVIC, M. GREINER, and G. SOFF, *Electromagnetic dissociation of Pb nuclei in peripheral ultrarelativistic heavy-ion collisions*, Phys. Rev. C **48** (1993), 2011–2015.
- [VKD<sup>+</sup>00] C. R. VANE, H. F. KRAUSE, S. DATZ, P. GRAFSTRÖM, H. KNUDSEN, C. SCHEIDENBERGER, and R. H. SCHUCH, *Radiative electron capture at ultrarelativistic energies: 33-TeV Pb<sup>82+</sup> ions*, Phys. Rev. A **62** (2000), 010701–1–4.
- [WAL93] W. WALTER, *Gewöhnliche Differentialgleichungen*, 5th ed., Springer-Verlag, 1993.
- [WBS90] J. S. WU, C. BOTTCHER, and M. R. STRAYER, *Coherent particle production in a classical field approximation*, Phys. Lett. B **252** (1990), 37–42.
- [WEI95] S. WEINBERG, *The Quantum Theory of Fields*, vol. 1, Cambridge University Press, Cambridge, 1995.
- [WIL65] J. H. WILKINSON, *The Algebraic Eigenvalue Problem*, Clarendon Press, Oxford, 1965.
- [WOU<sup>+</sup>92] J. C. WELLS, V. E. OBERACKER, A. S. UMAR, C. BOTTCHER, M. R. STRAYER, J.-S. WU, and G. PLUNIEN, *Nonperturbative electromagnetic lepton-pair production in peripheral relativistic heavy-ion collisions*, Phys. Rev. A **45** (1992), 6296–6312.
- [WSE99] J. C. WELLS, B. SEGEV, and J. EICHLER, *Asymptotic channels and gauge transformations of the time-dependent Dirac equation for extremely relativistic heavy-ion collisions*, Phys. Rev. A **59** (1999), 346–357.
- [WÜL88] U. WÜLLER, *Asymptotische Vollständigkeit beim Charge-Transfer-Modell*, Dissertation, Fachbereich Mathematik der Freien Universität Berlin, Berlin, 1988.
- [YAJ80] K. YAJIMA, *A multi-channel scattering theory for some time dependent Hamiltonians, charge transfer problem*, Commun. Math. Phys. **75** (1980), 153–178.