

## List of publications, G. Nenciu: ISI journals

- [1] N. Aneglescu, D. Grecu, **G. Nenciu**  
On the Asymptotic Expansion of the Static Green's  
Function in Cubic Crystals  
Z. Phys. **236**, 14-20 (1970)
- [2] **G. Nenciu**  
About the Best Stability in Weighted Dispersion  
Relations  
Nuovo Cim. Letters **4**, 96-100 (1970)
- [3] G. Costache, **G. Nenciu**  
Absence of Spontaneous Magnetization in Isotropic  
Partially Finite Systems  
Phys. Letters **33A**, 422-423 (1971)
- [4] **G. Nenciu**  
On Non-existence of Spontaneous Magnetization  
in a One-dimensional Heisenberg Ferromagnet  
Phys. Letters **34A**, 422-423 (1971)
- [5] N. Aneglescu, D. Grecu, **G. Nenciu**  
The Asymptotic Expansion of the Displacement Field  
of Localised Defects in Cubic Crystals  
Crystal Lattice Defects **2**, 175-179 (1971)
- [6] N. Aneglescu, **G. Nenciu**, V. Protopopescu  
On Stable Potentials  
Commun. Math. Phys. **22**, 162-165 (1971)
- [7] S. Ciulli, **G. Nenciu**  
A Rigorous Lower Bound for the Maximum of Amplitude  
from Error-affected Data  
Nuovo Cim. **8**, 75-85 (1972)
- [8] N. Aneglescu, G. Costache, **G. Nenciu**  
Molecular Field Theory and Phase Transitions in  
Partially Finite Systems  
Phys. Stat. Solidi **51**, 205-214 (1972)

- [9] S. Ciulli, **G. Nenciu**  
Weighted Dispersion Relations and Cut to Cut Extrapolations  
Commun. Math. Phys. **26**, 237-246 (1972)
- [10] **G. Nenciu**, I. Raszillier  
Optimal Lower Bounds on the Hadronic Contribution to the  
Muon Anomalous Magnetic Moment  
Nuovo Cim. **11A**, 319-332 (1972)
- [11] N. Anjelescu, M. Bundaru, **G. Nenciu**  
On the Ground state of Ising Chains with Finite Range Interactions  
Phys. Lett. **A43**, 5,6 (1973)
- [12] N. Anjelescu, **G. Nenciu**  
On the Independence of the Thermodynamic Limit on  
the Boundary Condition in Quantum Statistical Mechanics  
Comm. Math. Phys. **29**, 15-30 (1972)
- [13] **G. Nenciu**  
On the Surface Contribution to the Grand  
Canonical Pressure of Free Quantum Gases  
J. Stat. Phys. **7**, 119-130 (1973)
- [14] **G. Nenciu**  
The Schur-Pick-Nevanlinna Interpolation -an  
Alternative to N/D Equations  
Nucl. Phys. **B53**, 584-596 (1973)
- [15] N. Sznajder Hald, J. L. Petersen, **G. Nenciu**  
On Determinations of the KN Effective Coupling  
Constant from forward Amplitude  
Nucl. Phys. **B59**, 93-105 (1973)
- [16] **G. Nenciu**, I. Raszillier, W. Schmidt, H. Schneider  
Optimal Information for the Pion Form Factor from  
Analyticity and Experimental Data  
Nucl. Phys. **B63**, 285-300 (1973)

- [17] **G. Nenciu**  
On the  $L^2$  Improperly Posed Problems  
J. Math. Anal. App. **42**, 132-137 (1973)
- [18] S. Ciulli, **G. Nenciu**  
Optimal Analytic Extrapolation for the Scattering  
Amplitude from Cuts to Interior Points  
J. Math. Phys. **14**, 1675-1691 (1973)
- [19] **G. Nenciu**, G. Rasche, W. S. Woolcock  
A New Method for the General Solution of Partial  
Wave Dispersion Relations  
Helv. Phys. Acta **47**, 137-162 (1974)
- [20] **G. Nenciu**  
Eigenfunction Expansions for Schrödinger and Dirac  
Operators with Singular Potentials  
Commun. Math. Phys. **42**, 221-229 (1975)
- [21] N. Anghel, M. Bundaru, **G. Nenciu**  
On the Landau Diamagnetism  
Commun. Math. Phys. **42**, 9-28 (1975)
- [22] N. Anghel, M. Bundaru, **G. Nenciu**  
On the Perturbations of Gibbs Semigroups  
Commun. Math. Phys. **42**, 29-30 (1975)
- [23] **G. Nenciu**  
Self-adjointness and Invariance of the Essential  
Spectrum for Dirac Operators Defined as Quadratic Forms  
Commun. Math. Phys. **48**, 235-247 (1976)
- [24] **G. Nenciu**  
Self-adjointness and Invariance of the Essential  
Spectrum for Dirac Operators Defined as Quadratic Forms  
Helv. Phys. Acta **50**, 1-4 (1977)
- [25] **G. Nenciu**, G. Scharf  
On Regular External Fields in Quantum Electrodynamics  
Helv. Phys. Acta **51**, 412-424 (1978)

- [26] **G. Nenciu**, G. Rasche, M. Stihl, W. S. Woolcock  
 General Solution of Multichannel Partial Wave  
 Dispersion Relations. I. Coincident Thresholds,  
 Pole Approximations  
 Helv. Phys. Acta **51**, 608 (1978)
- [27] **G. Nenciu**  
 On the Adiabatic Limit for Dirac Particles in  
 External Fields  
 Commun. Math. Phys. **76**, 117-128 (1980)
- [28] **G. Nenciu**  
 On the Adiabatic Theorem in Quantum Mechanics  
 J. Phys. A: Math. Gen. **13**, L15 (1980)
- [29] **G. Nenciu**, G. Rasche, W. S. Woolcock  
 General Solution of Multichannel Partial Wave  
 Dispersion Relations. II. Noncoincident Thresholds,  
 One Pole approximation  
 Helv. Phys. Acta **53**, 134-158 (1980)
- [30] A. Nenciu, **G. Nenciu**  
 On the Dynamics of Bloch Electrons in External  
 Electric Fields  
 Phys. Lett. **78A**, 101 (1980)
- [31] N. Anghel, M. Bundaru, G. Costache, **G. Nenciu**  
 The critical Behaviour of the Kac Type Models for  
 Semi-infinite Systems  
 J. Stat. Phys. **24**, 529-552 (1981)
- [32] **G. Nenciu**  
 Adiabatic Theorem and Spectral Concentration. I. Arbitrary  
 Order Spectral Concentration for the Stark Effect in  
 Atomic Physics.  
 Commun. Math. Phys. **82**, 121-136 (1981)

- [33] A. Nenciu, **G. Nenciu**  
Dynamics of Bloch Electrons in External Electric Fields:  
I. Bounds for Interband Transitions and Effective Wannier  
Hamiltonians  
J. Phys. A: Math. Gen. **14**, 2817, (1981)
- [34] N. Anagelescu, **G. Nenciu**, N. S. Tonchev  
On the Order of Excitonic Phase Transition  
Phys. Lett. **A93**, 201-204 (1983)
- [35] A. Nenciu, **G. Nenciu**  
Dynamics of Bloch Electrons in External Electric Fields:  
II. Existence of Strak-Wannier resonances  
J. Phys. A: Math. Gen. **15**, 3313 (1982)
- [36] A. Nenciu, **G. Nenciu**  
The Existence of Energy gaps for Three Dimensional  
Systems without Long Range Order  
J. Phys. A Math. Gen. **14**, L109 (1981)
- [37] **G. Nenciu**, G. Rasche  
A Lowner Type Interpolation Problem Applied to  
Partial Wave Dispersion Relations  
Helv. Phys. Acta **56**, 1046 (1983)
- [38] **G. Nenciu**  
Removing Cut-offs Singular Perturbations: an  
Abstract Result  
Lett. Math. Phys. **7**, 301 (1983)
- [39] **G. Nenciu**  
Applications of the Krein Resolvent Formula to the  
Theory of Self-adjoint Extensions of Positive  
Symmetric Operators  
J. Operator Theory **10**, 209 (1983)
- [40] **G. Nenciu**  
Existence of the Exponentially Localised  
Wannier Functions  
Commun. Math. Phys. **91**, 81-85 (1983)

- [41] N. Angelescu, G. Nenciu, N. S. Tonchev  
On the Influence of the Reservoir and of the Shape of the  
Fermi Surface on the Phase Diagram of Two-band Models for  
Cr Alloys  
J. Phys. F: Met. Phys. **14**, 2155-2166 (1984)
- [42] **G. Nenciu**  
Stability of Energy Gaps under Variations of  
the Magnetic Field  
Lett. Math. Phys. **11**, 127-132 (1986)
- [43] **G. Nenciu**  
Existence of Spontaneous Pair Creation in  
the External Field Approximation of Q.E.D.  
Commun. Math. Phys. **109**, 303-312 (1987)
- [44] **G. Nenciu**  
Bloch Electrons in a Magnetic Field: Rigorous  
Justification of Peierls-Onsager Effective  
Hamiltonian  
Lett. Math. Phys. **17**, 247-252 (1989)
- [45] D. R. Grigore, **G. Nenciu**, R. Purice  
On the Nonrelativistic Limit of the Dirac  
Hamiltonian  
Ann. Inst. Henri Poincaré **51**, 231-263 (1989)
- [46] A. Nenciu, **G. Nenciu**  
Existence of Stark-Wannier Resonances for Nonperiodic  
One-dimensional Systems  
Phys. Rev. **B40**, 3622-3624 (1989)
- [47] **G. Nenciu**, G. Rasche  
Adiabatic Theorems and Gell-Mann-Low Formula  
Helv. Phys. Acta **62**, 372-388 (1989)
- [48] A. Boutet de Monvel, **G. Nenciu**  
On the Theory of Adiabatic Invariants for Linear Hamiltonian  
Systems  
Comptes Rendus Acad. Sci. Paris, **A310**, 807-810 (1990)

- [49] **G. Nenciu**  
Dynamics of Band Electrons in Electric and  
Magnetic Fields: Rigorous Justification of  
Effective Hamiltonians  
Rev. Mod. Phys. **63**, 91-127 (1991)
- [50] Ph-A. Martin, **G. Nenciu**  
Perturbation Theory for Time Dependent Hamiltonians:  
Rigorous Justification of the Effective Hamiltonians  
Helv. Phys. Acta **65**, 529-559 (1992)
- [51] **G.Nenciu**, G. Rasche  
Adiabatic Theorem for Non-Selfadjoint Operators  
J. Phys A: Math. Gen. **25**, 5741-5751 (1992)
- [52] A. Nenciu, **G. Nenciu**  
Existence of Exponentially Localised  
Wannier Functions for Nonperiodic Systems  
Phys. Rev. **B47**, 10112-10115 (1993)
- [53] **G. Nenciu**  
Linear Adiabatic Theory. Exponential Estimates  
Commun. Math. Phys. **152**, 479-496 (1993)
- [54] **G. Nenciu**  
Floquet Operators without Absolutely  
Continuous Spectrum  
Ann. Inst. Henri Poincare **59**, 91-97 (1993)
- [55] Ph. A. Martin, **G. Nenciu**  
Semi-classical Inelastic S-Matrix for  
One-dimensional N-States Systems  
Rev. Math. Phys. **7**, 193-242 (1995)
- [56] A. Boutet de Monvel, A. Nenciu, **G. Nenciu**  
Perturbed Periodic Hamiltonians: Essential Spectrum  
and Exponential Decay of Eigenfunctions  
Lett. Math. Phys. **34**, 119-133 (1995).

- [57] **G. Nenciu**, R. Purice  
One-dimensional Dirac Hamiltonian: Semiclassical and High-energy Asymptotics for Gaps. *J. Math. Phys.* **37**, 3153-3167 (1996)
- [58] **G. Nenciu** Adiabatic Theory: Stability of Systems with Increasing Gaps. *Ann. Inst. Henri Poincaré* **67**, 411-424 (1997).
- [59] A.Nenciu, **G.Nenciu**  
Existence of generalised Wannier functions for one dimensional systems. *Commun. Math. Phys.* **190**, 541-548 (1998).
- [60] D.H.Cornean, **G.Nenciu**  
On the eigenfunction decay for magnetic Schrodinger operators. *Commun. Math. Phys.* **192**, 671-685 (1998)
- [61] D. H. Cornean, **G. Nenciu**  
Two dimensional magnetic Schrodinger operators: width of minibands in the tight binding approximation. *Annales Henri Poincare* **1**, 203-222 (2000).
- [62] J. Asch, F. Bentosela, P. Duclos, **G. Nenciu**  
On the dynamics of crystal electrons, high momentum regime. *J. Math. Analysis Appl.* **256**, 99-114 (2001).
- [63] A. Jensen, **G.Nenciu**  
A unified approach to resolvent expansions at threshold  
*Rev. Math. Phys.* **13**, 717-754 (2001).
- [64] **G. Nenciu**  
On asymptotic perturbation theory for Quantum Mechanics: Almost invariant subspaces and gauge invariant magnetic perturbation theory. *J. Math Phys.* **43**, 1273-1298 (2002).
- [65] **G. Nenciu**, V. Sordoni  
Semiclassical limit for multistate Klein-Gordon systems: Almost invariant subspaces and scattering theory. *J. Math. Phys.* **45**, 3676-3696 (2004)
- [66] F. Bentosela, P. Duclos, V. Moldoveanu, **G. Nenciu**  
The Dynamics of 1D Bloch Electrons in Constant Electric Field. *J. Math. Phys.* **46**, 043505(41p) (2005)



- [67] A. Jensen, **G. Nenciu**  
The Fermi Golden Rule and its form at thresholds, in odd dimensions.  
Commun. Math. Phys. **261**, 693-727 (2006)
- [68] H. D. Cornean, **G. Nenciu**, T. G. Pedersen  
The Faraday effect revisited: general theory.  
J. Math. Phys. **47** (2006), no. 1, 013511, 23 pp.
- [69] A. Jensen, **G. Nenciu**  
Schrödinger operators on the half line: resolvent expansions and the Fermi golden rule at thresholds.  
Proc. Indian Acad. Sci. Math. Sci. **116** (2006), no. 4, 375-392.
- [70] **G. Nenciu**  
Independent electron model for open quantum systems: Landauer-Büttiker formula and strict positivity of the entropy production.  
J. Math. Phys. **48** (2007), no. 3, 033302, 8 pp.
- [71] H. D. Cornean, A. Nenciu, **G. Nenciu**  
Optimally localized Wannier functions for quasi one-dimensional nonperiodic insulators.  
J. Phys. A: Math. Theor. **41** (2008), 125202 (15 p).
- [72] H. D. Cornean, P. Duclos, **G. Nenciu**, and R. Purice  
Adiabatically switched-on electrical bias and the Landauer-Büttiker formula.  
J. Math. Phys. **49** (2008), 102106 (20 p).
- [73] V. Dinu, A. Jensen, **G. Nenciu**  
Nonexponential decay laws in perturbation theory of near threshold eigenvalues.  
J. Math. Phys. **50** (2009), no. 1, 013516, 20 pp.
- [74] **G. Nenciu**, I. Nenciu  
On confining potentials and essential self-adjointness for Schrödinger operators on bounded domains in  $R^n$ .  
Ann. Henri Poincaré **10**, 377-394 (2009).
- [75] H. D. Cornean, **G. Nenciu**  
The Faraday effect revisited: thermodynamic limit.  
J. Funct. Anal. **257** (2009), no. 7, 2024-2066.

- [76] H.D.Cornean, **G. Nenciu**  
The Faraday effect revisited: sum rules and convergent issues.  
J. Phys. A: Math.Theor. **43**, (2010), 474012 (12 pag).

## List of publications, G. Nenciu: Conference Proceedings

- [1] **G. Nenciu**  
Strong External Fields in Q. E. D. Rigorous Results  
in Proceedins of the International Summer School in  
Heavy Ion Physics, Predeal, Romania, 1978
- [2] **G. Nenciu**  
Asymptotic Invariant Subspaces, adiabatic theorems and block  
diagonalisation  
In: Recent Developments in Quantum Mechanics. Kluver, Dordrecht,  
1991, p. 133-149 ;  
Recent Developments in Quantum Mechanics, Brasov, Romania, 1989.
- [3] **G. Nenciu**  
Adiabatic Reduction Theory. Semiclassical  
S-Matrix for N-State One-dimensional Systems.  
In: Op. Theor.: Advances and Applications, **70** , 307-319, (Birkhäuser  
Verlag Basel) (1994)  
Mathematical Results in Quantum Mechanics, Blossin, Germania, 1993
- [4] **G. Nenciu**  
Linear Adiabatic Theory: Exponential Estimates and Applications.  
In: Algebraic and Geometric Methods in Mathematical Physics' Kluver,  
1996, 127-142.  
Algebraic and Geometric Methods in Mathematical Physics, Kaciveli,  
Ukraina , Septembrie 1993.
- [5] **G. Nenciu**  
On Exponential Decay of Eigenfunctionsfor Schrodinger and Dirac Opera-  
tors.  
In: Journees "Equations aux Derivees Partielles", Saint Jean de Monts  
Equations aux Derivees Partielles, Saint Jean de Monts, Franta, Iunie 1994.

- [6] **G. Nenciu**  
 On asymptotic perturbation theory for quantum mechanics.  
 In: Long Time Behaviour of Classical and Quantum Systems. (Proceedings of the Bologna APTEX conference) S. Graffi, A. Martinez Eds., World Scientific 2001 pp 238-256.
- [7] **G. Nenciu**  
 Almost invariant subspaces for quantum evolutions. Multiscale methods in quantum mechanics  
 Trends Math., Birkhauser Boston, Boston, MA, pp 83-97 2004.
- [8] **G. Nenciu**  
 On the smoothness of gap boundaries for generalized Harper operators.  
 In: Advances in operator algebras and mathematical physics, 173–182, Theta Ser. Adv. Math., 5, Theta, Bucharest, 2005.
- [9] A. Jensen, **G. Nenciu**  
 Uniqueness results for transient dynamics of quantum systems. Adventures in mathematical physics, 165–174,  
 Contemp. Math., **447**, Amer. Math. Soc., Providence, RI, 2007.
- [10] A. Jensen, **G. Nenciu**  
 On the Fermi Golden Rule: Degenerate eigenvalues.  
 In: Perspectives in Operator Algebras and Mathematical Physics, pp 91-103 Theta, Bucharest 2008.
- [11] A. Jensen, **G. Nenciu**  
 Exponential Decay Laws in Perturbation Theory of Threshold and Embedded Eigenvalues  
 Conference Information: 15th International Congress on Mathematical Physics, AUG 05-11, 2006 Rio de Janeiro, BRAZIL Source: NEW TRENDS IN MATHEMATICAL PHYSICS Ed: V. Sidoravicius, Springer (2009), pag. 525-538.