

Elena Cordero

Curriculum Vitae

Personal Information

Place of Birth Torino, Italy
Date of Birth February 3, 1973
Citizenship Italian
Maternity leave From 27/09/2010 to 10/02/2011, First daughter Elisa (06/10/2010)
From 14/04/2014 to 12/12/2014, Second son Francesco (13/05/2014)

Education

28-01-2004 Ph.D. in Mathematics, Università degli Studi di Torino
Thesis: *Time-Frequency Analysis of Localization Operators and Wavelet Representations*
Supervisor: Professor Anita Tabacco
10-07-1996 Laurea cum laude in Mathematics, Università degli Studi di Torino
Thesis: *Pseudodifferential operators and applications to the problem of local solvability*
Supervisor: Professor Luigi Rodino

Academic positions

Current

1-03-2022– Present **Full Professor in Mathematical Analysis**, *Dipartimento di Matematica "Giuseppe Peano"*, University of Torino, Torino, Italy.

Past

1-11-2010– 28-02-2022 **Associate Professor in Mathematical Analysis**, *Dipartimento di Matematica "Giuseppe Peano"*, University of Torino, Torino, Italy.
2005–2010 **Researcher in Mathematical Analysis**, *Dipartimento di Matematica "Giuseppe Peano"*, Torino, Italy.
2004 **Post-Doc Research Fellow**, *Laboratoire Jacques-Louis Lions, Paris VI*.
2004–2005 **Research Assistant (Assegnista di ricerca)**, *Dipartimento di Matematica, Politecnico di Torino, Italy*.

Dipartimento di Matematica "Giuseppe Peano"
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

1/20

Visiting Positions

- January 2014 **Erwin Schrödinger International Institute for Mathematical Physics (ESI), University of Vienna**, *Follow-up Workshop on "Time-Frequency Analysis"*.
- October 2012 **Erwin Schrödinger International Institute for Mathematical Physics (ESI), University of Vienna**, *Phase space methods for pseudo-differential operators*.
- April 4-14, 2006 **Washington University in St. Louis, Missouri**, *Research activities with Professor G. Weiss*.
- June 2006 **Numerical Harmonic Analysis Group (NuHAG), Vienna**, *Research activities with Professors K. Gröchenig and H.G. Feichtinger*.
- June 2005 **Erwin Schrödinger International Institute for Mathematical Physics (ESI), University of Vienna**, *Research activities with Professors K. Gröchenig and K. A. Okoudjou*.
- From April to June 2004 **Laboratoire Jacques-Louis Lions, Paris VI, Paris**, *Post-Doc Research Fellowship*, Supervisor: Professor A. Cohen.
- October 2002 **University of Storrs, CT, USA**, *Research activity with Professor K. Gröchenig*.

Professional experience

- 2001-2005 Professor in Mathematics on research leave, class of competition A047, ITIS Enzo Ferrari, Torino, and, later, Liceo Scientifico C. Darwin Rivoli (To)
- 1999 Winner of the competition, based on tests and qualifications for access to the roles of the secondary school level, organized by DDG 1.4.1999, for the classes of competition: A047-Mathematics and A048-Applied Mathematics
- 1997-2000 Analyst programmer, Banksiel S.p.a., Italy
- 1996-1997 Employee, Banca Sella S.p.a., Italy

Bibliometric Indicators (August 18, 2024)

Scopus source: Publications: 89, Citations: 1670 total citations by 666 documents, *h*-index: 24
MathSciNet source: Publications: 92, Citations: 1284 in 530 publications, most quoted paper: 162
Google Scholar source: Citations: 2745, *h*-index: 31

Principal Investigator of research projects

- PI of the Research Project "Analisi tempo-frequenza applicata alla teoria dei segnali", funded by GNAMPA, 2020.
- PI of the Research Project "Analisi microlocale e tempo-frequenza, con applicazioni", funded by GNAMPA, 2017.
- PI of the Research Project "Analisi Tempo frequenza ed applicazioni alle equazioni alle derivate parziali", funded by GNAMPA, 2010.

GEV Member

- 2020 - 2022, Member of the Group of evaluation experts (GEV) in Mathematics, for the Italian Evaluation of Research Quality 2015-2019 (VQR 2015-2019).

Dipartimento di Matematica "Giuseppe Peano"
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • 📠 (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, *ScopusID:7003893630*

2/20

Awards

- Awarded the National Full Professor habilitation (Abilitazione Scientifica Nazionale per I fascia), 10/05/2019
- Awarded the National Full Professor habilitation (Abilitazione Scientifica Nazionale per I fascia), 2013
- *Optime Prize for Best Master Theses*, Unione Industriale di Torino, in collaboration with Università degli Studi di Torino and Politecnico di Torino, 1997.

National Fundings

- Member of the Project "Modelli matematici e algoritmi predittivi di intelligenza artificiale per la mobilità sostenibile", funded by *Fondazione CRT*, 2022. Amount of the contribution: 20.000,00 euros
- Principal Investigator of the Research Project "Analisi tempo-frequenza applicata alla teoria dei segnali", funded by GNAMPA, 2020. Amount of the contribution: 1.350,00 euros
- Member of the project: "Optimal Shapes in Boundary Value Problems", funded by INdAM, 2018
- Recipient of the fund "Fondo per il Finanziamento delle Attività di Base di Ricerca - FFABR", 2017. Amount of the contribution: 3.000,00 euros
- Principal Investigator of the Research Project "Analisi microlocale e tempo-frequenza, con applicazioni", funded by GNAMPA, 2017 (From March to July 2017). Amount of the contribution: 1.600,00 euros
- Principal Investigator of the Research Project "Analisi Tempo frequenza ed applicazioni alle equazioni alle derivate parziali", funded by GNAMPA, 2010 Amount of the contribution: 2.000,00 euros
- Member of the following PRIN projects: PRIN2012: *Variational and perturbative aspects of nonlinear differential problems*, 2014-2017. PRIN2008: *Operatori Pseudo-Differenziali ed Analisi Tempo-Frequenza*, 2010-2012. PRIN2006: *Analisi Microlocale ed Applicazioni*, 2006-2008.

Local Fundings

- Principal Investigator of the Research Project "Microlocal and time-frequency analysis, with applications", funded by the University of Torino, 2017. Amount of the contribution: 19.847,68 euros
- Principal Investigator of the Research Project "Analisi di Fourier per equazioni alle derivate parziali ed operatori pseudo-differenziali", funded by the University of Torino, 2013. Amount of the contribution: 19.818,16 euros
- Principal Investigator of the Research Project "Analisi di Fourier e equazioni alle derivate parziali", funded by the University of Torino, 2011. Amount of the contribution: 8438,12 euros.

Organization of Conferences

- Co-organizer of the Special Session: "Approximation theory and algorithms with applications to AI/ML" at NUMTA2023 (4th International Conference and Summer School NUMTA 2023 "Numerical Computations: Theory and Algorithms)", Tui Magic Life Calabria, Italy, June 14-20, 2023, <https://www.numta.org>
- Member of the Organizing Committee of the *XL Convegno Nazionale di Analisi Armonica*, Politecnico di Torino, DISMA, May 26-28, 2021, <http://www.aatorino21.polito.it>
- Member of the Organizing Committee of the Conference: *ATFA19: Aspects of Time-Frequency*

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

3/20

Analysis, Politecnico di Torino, DISMA, Torino, Italy, June 25-27, 2019,
<http://www.atfa19.polito.it>

- Member of the Organizing Committee of the Conference: *Micro and pseudo..., but Great! MicroLocal and Time Frequency Analysis 2018, Università di Torino, Torino, Italy, July 2-6, 2018,* www.mltf18.unito.it
- Member of the Organizing Committee of the Conference: *ATFA17: Aspects of Time-Frequency Analysis, Politecnico di Torino, Torino, Italy, June 5-7, 2017*
- Member of the Organizing Committee of the *XXXIII Convegno Nazionale di Analisi Armonica,* Alba, June 17-20, 2013, <http://calvino.polito.it/anfunz/Alba/alba2013.htm>
- Member of the Organizing Committee of the *XXIX Convegno Nazionale di Analisi Armonica,* Bardonecchia, June 15-19, 2009
- Member of the Organizing Committee of *The Italian-Bulgarian Workshop on PDE and Time-Frequency Analysis,* University of Torino, Turin, Italy, September 8-9, 2005. Talk: "Symbolic calculus for localization operators"
- Member of the Organizing Committee of the special two months: *Microlocal Analysis and Related Subjects,* May-July 2003, Università and Politecnico di Torino.

Recent Invited Talks

- Invited Speaker at *TIGRECO Workshop,* Università degli studi di Bergamo, April 15-16, 2024. Talk: "Wigner kernels of operators: application to Schrödinger equations"
- Plenary Speaker at *Fourier Analysis and Partial Differential Equations II,* Ferrara, 29-30 January, 2024. Talk: "Wigner Representation of Schrödinger Propagators"
- Invited speaker at *Workshop on Quantum Harmonic Analysis,* the Norwegian University of Science and Technology (NTNU), June 5-9, 2023, Trondheim, Norway. Talk: "Metaplectic analysis of time-frequency representations. Applications to function spaces, pseudodifferential operators, and evolution equations"
- Analysis Seminar at the Department of Mathematics, *Delft University of Technology,* November 22, 2022, Delft, The Netherlands. (Invited by Prof. Jan van Neerven). Talk: "Time-frequency Analysis of Operators from a Symplectic Perspective: Results and Challenges"
- Plenary Speaker at *GN2022,* September 19-23, 2022, Vienna, Austria. Talk: "Symplectic Analysis of Operators: Applications to Schrödinger equations and Wave Fronts"
- Invited Speaker at *Complex and Fourier Analysis, and Operator Theory 2,* September 12-16, 2022, Roma. Talk: "Symplectic Time-frequency Analysis and Applications to Quantization, Schrödinger equations and wave fronts"
- Conference: *Advances in Pseudo-Differential Operators,* Ghent Analysis & PDE Center, Ghent University, Belgium, July 7-8, 2020. Talk: "Properties of Eigenfunctions of Pseudodifferential operators via Gabor frames"
- *Workshop INDAM "Anomalies in PDE's",* September 9-13, 2019, Dipartimento di Matematica "G. Castelnuovo", Università "La Sapienza", Roma. Talk: "Decay and Smoothness for Eigenfunctions of Localization Operators"
- *Zurich Colloquium in Applied and Computational Mathematics,* ETH Zurich, Zurich, Switzerland, December 5, 2018. (Invited by Prof. Rima Alaifari). Talk: "Generalized Born-Jordan Distributions and Applications",
<https://www.math.ethz.ch/sam/news-and-events/zhacm-colloquia.html?y=2018>
- *New Trends in Harmonic Analysis,* May 24-25, 2018, Politecnico of Torino. Talk: "Born-Jordan distribution, quantization, interferences and pseudodifferential calculus "

Dipartimento di Matematica "Giuseppe Peano"
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

4/20

- *7th International Conference on Computational Harmonic Analysis (ICCHA7) in conjunction with the 33rd annual Shanks Lecture*, May 14-18, 2018, Vanderbilt University, Nashville, USA. Talk: "On the reduction of the interferences in the Born-Jordan distribution"
- *Quantum Harmonic Analysis and Symplectic Geometry*, April 21-24, 2018, Strobl, Austria. Talk: "Symplectic Harmonic Analysis: from quantum mechanics to PDEs".

Courses, Conferences and Main Talks

- *International Conference on Generalized Functions GF224*, Talk: "Understanding of linear operators through Wigner analysis", September 16-20, 2024, Torino, Italy.
- *Strobl24 on Harmonic Analysis*, June 9-15, 2024, Strobl, Austria. Talk: "Wigner Representation of Schrödinger Propagators".
- *XLIII Convegno nazionale di Analisi armonica*, May 28-31, 2024, Vicenza. Talk: "Wigner kernel and Gabor matrix of Schrödinger Propagators".
- *Generalized Functions Online Workshop (4th Edition)*, International Day for Women in Mathematics, May 10, 2024. Talk: "Wigner Analysis of Fourier Integral Operators".
- *ICMAM Satellite Conference in Analysis and PDE 2023 (Online)*, October 10-14, 2023
- *4th International Conference and Summer School NUMTA 2023 "Numerical Computations: Theory and Algorithms"* June 14-20, 2023, at Tui Magic Life Calabria, Italy. Talk: "Metaplectic Gabor frames of Wigner-decomposable distributions".
- *Generalized Functions Online Workshop (3rd Edition)*, International Day for Women in Mathematics, May 12, 2023. Talk: "Symplectic Analysis of Time-Frequency Spaces".
- *Strobl22: Applied Harmonic Analysis and Friends*, 19-24 June, 2022, Strobl, Austria. Talk: "Comparisons between Fourier and STFT multipliers: the smoothing effect of the Short-time Fourier Transform".
- *XLI Convegno di Analisi Armonica*, May 30-June 1, 2022, Genova. Talk: "Symplectic time-frequency analysis and Schrödinger equations".
- *Generalized Functions Online Workshop*, May 12, 2022. Talk: "Symplectic time-frequency representations and characterization of modulation spaces".
- *IWOTA 2021, International Workshop on Operator Theory and its Applications*, August 9-13, 2021, Chapman University, ORANGE, CA. Talk: "Wigner analysis of operators".
- *Quantum Harmonic Analysis and Applications to Operator Theory*, August 3-5, 2021, NTNU, Norway. Talk: "Wigner analysis of operators". <https://wiki.math.ntnu.no/qha21/start>
- *13th ISAAC Congress*, August 2-6, 2021
- *Generalized Functions Online Workshop*, May 12, 2021
- *An Introduction to EMI (English as a Medium of Instruction)* 20-hour online course delivered by the British Council, from the 29th of June to 9th of July, 2020
- *XXXIX Convegno di Analisi Armonica*, June 3-5, 2020, Bologna. Talk: "Eigenfunctions of Localization Operators and Gabor frames"
- *Jubilee of Fourier Analysis and Applications: A Conference Celebrating John Benedetto's 80th Birthday*, University of Maryland, College Park, MD, USA, September 19-21, 2019
- *Convegno Nazionale di Analisi Armonica*, May 27-29, 2019, Bergamo, Italy. Talk: "Signal Analysis via generalized Born-Jordan distributions"
- *Conference: L'eredità matematica e civile di Francesco Faà di Bruno*, September 22, 2017, Politecnico di Torino, Italy
- *Conference on "Time-Frequency Analysis and Related Topics"*, June 6-11, 2016, Strobl, Austria. Talk: "Gabor Frames of Gaussian Beams for the Schrödinger equation"

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

5/20

- *Workshop on "Time-Frequency Analysis", Erwin Schrödinger Institute (Univ. Vienna), January 13-17, 2014, Viena, Austria.* Talk: "Time-frequency analysis of Schrödinger Equations with Bounded Potentials"
- *Helsinki ECM Satellite 2012- Fourier Analysis and Pseudo-Differential Operators, June 25-30, 2012, Helsinki, Finland.* Talk: "Gabor Analysis of Fourier Integral Operators"
- *XXXII Convegno di Analisi Armonica, Genova, Italy, June 4-8, 2012.* Talk: "Gabor Analysis of Fourier Integral Operators"
- *XXX Convegno di Analisi Armonica, Palazzo Feltrinelli, Gargnano, June 7-11, 2010.* Talk: "The Cauchy Problem for the Vibrating Plate Equation"
- *7th ISAAC Congress, July 13-18, 2009, Imperial College, London.* Talk: "Sharp Results for the STFT and Localization Operators"
- *Second conference on Pseudo-Differential Operators and related topics, June 23-27, 2008, Växjö University, Svezia.* Talk: "Sparse Approximation of Fourier Integral Operators using Gabor frames"
- *ICMS 2008 - Classical and Modern Harmonic Analysis: from Theory to Numerical Computation, April 30- May 2, 2008, Edinburgh, Scotland. Invited speaker.* Talk: "Sparse Approximation of Fourier Integral Operators using Gabor frames"
- *Trends in Harmonic Analysis, June 17-23, 2007, Strobl (Austria).* Talk: "Strichartz Estimates in Wiener Amalgam Spaces for the Schrödinger Equation"
- *XXVI Convegno Nazionale di Analisi Armonica, May 22-27, 2006, Cortona.* Talk: "Reproducing groups for the metaplectic representation"
- *Wavelet Workshop at Washington University in St. Louis, April 3-7, 2006, St. Louis, Missouri, USA* Talk: "Reproducing groups for the metaplectic representation"
- *Joint Mathematics Meetings, Henry B. Gonzalez Convention Center, January 12-15, 2006, San Antonio, Texas, USA.* Talk: "Short-Time Fourier Transform Analysis of Localization Operators"
- *5th ISAAC Congress, July 25-30, 2005, Catania, Italy.* Talk: "Analytic features of reproducing groups for the metaplectic representation"
- *Coherent States, Wavelets, and Applications, Satellite Symposium to G24 & Group de Contact FNRS, July 10-12, 2002, UCL, Louvain-La-Neuve.* Talk: "Time-frequency techniques for the study of anti-Wick operators"
- *Wavelet Course in Cortona, July-August 2001, held by Professor G. Weiss (Washington University, St. Louis) and A. Aldroubi (Vanderbilt University).*

Editorial Activity

- 2020-now **Editorial board member of the *Journal of Fourier Analysis and Applications*, Springer, ISSN: 1069-5869.**
- 2022 **Associate Editor of the Volume "Microlocal and Time-Frequency Analysis", Printed Edition of the Special Issue Published in *Mathematics*, MDPI, Basel, Switzerland. ISBN 978-3-0365-3173-1.**
- 2020-2021 **Guest Editor for the (open access) journal *Mathematics*, Springer, ISSN: 1069-5869.**
- 2020 **Associate Editor of the Volume "Advances in Microlocal and Time-Frequency Analysis", *Applied and Numerical Harmonic Analysis*, Birkhäuser/Springer, 2020. ISBN 978-3-030-36137-2, <https://doi.org/10.1007/978-3-030-36138-9>.**

Dipartimento di Matematica "Giuseppe Peano"
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

6/20

2020 **Associate Editor of the Volume “Landscapes of Time-Frequency Analysis, ATFA19”**, *Applied and Numerical Harmonic Analysis*, Birkhäuser/Springer, 2020. ISBN 978-3-030-56004-1, <https://www.springer.com/gp/book/9783030560041>.

2019 **Associate Editor of the Volume “Landscapes of Time-Frequency Analysis”**, *Applied and Numerical Harmonic Analysis*, Birkhäuser/Springer, 2019. ISBN 978-3-030-05209-6, <https://www.springer.com/la/book/9783030052096>.

Membership in scientific bodies/juries

- 2024, Member of the Scientific Committee MATH-03/A - CODICE 1 for the evaluation procedure for RTDA, Settore concorsuale 01/A3, Università degli Studi di Bergamo, Italy.
- 2024, Evaluator of 14 Norwegian research groups of Mathematics and IT in Norway (EVALMIT), run by the Research Council of Norway (RCN).
- 2024, Member of the Scientific Committee for the evaluation procedure for Associate Professor (Professore Associato), Settore concorsuale 01/A3, Dipartimento di Matematica, Università degli Studi di Torino, Italy.
- 2024, Member of the Scientific Committee for the evaluation procedure for Full Professor (Professore Ordinario), Settore concorsuale 01/A3, DIMA, Università di Genova, Italy.
- 2023, Expert evaluator of the Marie Skłodowska-Curie Postdoctoral Fellowships (MSCA-PF) 2023
- 2023, Member of the Scientific Committee for the evaluation procedure for RTDB researcher, Settore concorsuale 01/A3, Dipartimento di Matematica, Dipartimento di Matematica “Federigo Enriques”, Università degli Studi di Milano, Italy.
- 2023, Member of the Scientific Committee for the evaluation procedure for Associate Professor (Professore Associato), Settore concorsuale 01/A3, Università di Ferrara, Italy.
- 2023, Member of the Scientific Committee for the evaluation procedure for RTDA researcher. Settore concorsuale 01/A3, Dipartimento di Matematica, Università di Bologna, Italy.
- 2023, First Opponent of the Adjudication Committee for the PhD Disputation of Helge Knutsen, Norwegian University of Science and Technology, Faculty of Information Technology and Electrical Engineering, Norway
- 2022, Member of the Scientific Committee for the evaluation procedure for Associate Professor, Settore concorsuale 01/A3, Dipartimento di Matematica “Giuseppe Peano”, Università degli Studi di Torino, Italy
- 2022, Member of the Scientific Committee for the selection procedure of 1-year researcher position for the *Dipartimento di Matematica “Giuseppe Peano”*, Università degli Studi di Torino, Italy.
- 2022, Member of the Scientific Committee for the selection procedure of 1-year researcher position for the *Dipartimento di Scienze Economico-Sociali e Matematico-Statistiche*, Università degli Studi di Torino, Italy.
- 2022, Panel member for the *Research Council of Norway* (16 proposals; in particular, First assessor for 3 projects, Second assessor for 3 projects)
- 2021, Panel member for the *Research Council of Norway* (18 proposals; in particular, First assessor for 2 projects, Second assessor for 4 projects)
- 2020 - 2022, Member of the Group of evaluation experts (**GEV**) in Mathematics, for the Italian Evaluation of Research Quality 2015-2019 (VQR 2015-2019)
- 2020-21, Member of the Scientific Committee for the selection procedure for Researcher *RT-B* (Settore concorsuale 01/A3), Università di Bologna, Italy
- 2020, Member of the Scientific Committee for the evaluation procedure for Associate Professor (Settore concorsuale 01/A3), Dipartimento di Matematica “Giuseppe Peano”, Università degli

Dipartimento di Matematica “Giuseppe Peano”

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

7/20

Studi di Torino, Italy

- 2020, Member of the Committee for the PhD Disputation of Anders Israelsson - Department of Mathematics, (Uppsala University), Sweden
- 2020, First Opponent of the Adjudication Committee for the PhD Disputation of Ulrik Bo Rufus Enstad, Department of Mathematics, (University of Oslo), Norway
- 2019, Member of the Scientific Committee for the selection procedure for Researcher *RT-B* (Settore concorsuale 01/A3), Università di Genova, Italy
- 2018, Member of the Scientific Committee for the selection procedure of 1-year researcher positions for the Department of Mathematics G. Peano, Università degli Studi di Torino, Italy.

Reviewer Activity

- *Referee for*: Advances in Mathematics, Advances in Nonlinear Analysis, Analysis and Applications, Applied and Computational Harmonic Analysis (ACHA) (*Certificate of Outstanding Contribution in Reviewing, January 2018*), Bollettino dell'Unione Matematica Italiana (BUMI), Communications in Partial Differential Equations, Digital Signal Processing, Discrete and Continuous Dynamical Systems - Series A (DCDS-A), Forum Mathematicum, IEEE Signal Processing Letters, IEEE Transactions on Information Theory, Inverse Problems, Georgian Mathematical Journal, Journal of Functional Analysis (JFA), Journal of Fourier Analysis and Applications (JFAA), Journal of Pseudo-Differential Operators and Applications, Journal of Mathematical Analysis and Applications (JMAA), Journal of Inequalities and Applications, Journal of Computational and Applied Mathematics, Linear Algebra and Its Applications, Michigan Mathematical Journal, Nonlinear Differential Equations and Applications NoDEA, Rend. Sem. Mat. Univ. Pol. Torino, Signal Processing, SIMA, Studia Math., Transaction of the AMS
- *Reviewer for*: Mathematical Reviews/MathSciNet
- *Reviewer for*: Faculty of Mathematics, University of Vienna, Habilitationsschrift (Habilitation thesis, April 2016)
- *Reviewer for*: The Italian Ministry of University and Research (M.I.U.R.)
- *Reviewer for*: FWF Der Wissenschaftsfonds (Austrian Science Fund), Austria
- *Reviewer for*: Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO), Belgium.

Institutional Offices

- From 2024, Referente AQ (Analisi della Qualità) del Dipartimento di Matematica, Università degli Studi di Torino, Italy
- From 2023 member of the Scientific Board of the *Ph.D. in Mathematics*, Università degli Studi di Torino, Italy
- From 2012 member of the Scientific Committee of the *Ph.D. Program in Pure and Applied Mathematics*, Università and Politecnico di Torino, Italy
- From 2012 to 2023, member of *Giunta del Consiglio del Corso di Studi*, Corso di Laurea in Matematica, Università degli Studi di Torino, Italy
- From 2015 member of *Giunta del Consiglio del Corso di Studi*, Master Degree in Stochastics and Data Science, Università degli Studi di Torino, Italy
- From 2018 to 2021 member of *Giunta del Dipartimento di Matematica*, Università degli Studi di Torino, Italy.

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

8/20

Participation in National Research Groups

- Member of the *Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni (GNAMPA)* of the Istituto Nazionale di Alta Matematica (INdAM)
- Member of the Unione Matematica Italiana (UMI)
- From 2020, member of the UMI group *Matematica per l'Intelligenza Artificiale ed il Machine Learning*
- From 2020, member of the UMI group *Teoria dell'Approssimazione e Applicazioni (T.A.A.)*.

Areas of research interest

- Harmonic analysis, time-frequency analysis and applications to Schrödinger equations
- Fourier integral operators (FIOs), generalized metaplectic operators, pseudodifferential operators
- Strichartz estimates for the Schrödinger equation in Wiener amalgam spaces
- Reproducing subgroups for the (extended) metaplectic representation
- Frame theory, wavelet frames, Gabor frames
- Semiclassical analysis, in particular applications to semi-classical Schrödinger type equations
- Born-Jordan, τ -quantizations and related pseudodifferential calculus
- Quadratic time-frequency representations and the problem of interferences
- Convolutional neural networks

Teaching activity

Ph.D. Courses

- AY 2019-20: *Microlocal and time-frequency analysis with applications*, PhD in Pure and Applied Mathematics, Università and Politecnico di Torino.
- AY 2017-18: *Symplectic Harmonic Analysis*, PhD in Pure and Applied Mathematics, Università and Politecnico di Torino.
- AY 2012-13: *Applications of Fourier Analysis* (10 hours), Dottorato in Matematica, Scuola di Dottorato in Scienze della Natura e Tecnologie Innovative, Università degli Studi di Torino.
- AY 2011-12: *Operatori pseudo-differenziali ed analisi tempo-frequenza* (10 hours), Dottorato in Matematica, Scuola di Dottorato in Scienze della Natura e Tecnologie Innovative, Università di Torino.
- AY 2007-08: *Analisi tempo-frequenza e applicazioni allo studio delle equazioni alle derivate parziali* (10 hours), Dottorato in Matematica, Scuola di Dottorato in Scienze della Natura e Tecnologie Innovative, Università di Torino.
- AY 2006-07: *Analisi tempo-frequenza* (10 hours), Dottorato in Matematica, Scuola di Dottorato in Scienze della Natura e Tecnologie Innovative, Università degli Studi di Torino.

Master Level

Holder or co-holder of the following courses:

- AY 2024-25: *Analysis* (32 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi superiore* (24 hours), *Metodi matematici per il machine learning* (16 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2023-24: *Analysis* (32 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi superiore* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

9/20

Torino.

- AY 2022-23: *Analysis* (32 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi superiore* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2021-22: *Analysis* (56 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi superiore* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

Analisi superiore (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2020-21: *Analysis* (56 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi superiore* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2019-20: *Analysis* (40 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi superiore* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2018-19: *Analysis* (56 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi superiore* (26 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2017-18: *Analysis* (56 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi microlocale ed operatori lineari* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2016-17: *Analysis* (56 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi microlocale ed operatori lineari* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2015-16: *Analysis* (40 hours), Master Degree in Stochastics and Data Science, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi microlocale ed operatori lineari* (28 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2014-15: *Analisi microlocale ed operatori lineari* (48 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2013-14: *Analisi superiore* (32 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2012-13: *Analisi superiore* (32 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Modelli matematici applicati alle scienze della Terra* (32 hours), Corso di Laurea Magistrale in Scienze Geologiche Applicate, Dipartimento di Scienze della Terra, Università degli Studi di Torino.

- AY 2011-12: *Analisi superiore* (40 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2010-11 *Modelli matematici applicati alle scienze della Terra* (32 hours), Corso di Laurea

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

10/20

Magistrale in Scienze Geologiche Applicate, Dipartimento di Scienze della Terra, Università degli Studi di Torino.

- AY 2009-10: *Analisi superiore* (32 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2008-09: *Analisi superiore* (28 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2007-08 *Analisi superiore* (24 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2006-07 *Analisi superiore* (28 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2005-06 *Analisi superiore* (28 hours), Corso di Laurea Magistrale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

Teacher in the following course:

- AY 2011-12 *Introduzione al linguaggio MATLAB ed applicazioni* (16 hours), Corso di Laurea Magistrale in Scienze Geologiche Applicate, Dipartimento di Scienze della Terra, Università degli Studi di Torino.

Bachelor Level

Holder or co-holder of the following courses:

- AY 2024-2025 *Analisi II* (24 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università di Torino; *Equazioni differenziali* (24 hours), Corso di Laurea in Matematica, Dipartimento di Matematica, Università degli Studi di Torino.
- AY 2023-2024 *Analisi II* (40 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università di Torino; *Equazioni differenziali* (24 hours), Corso di Laurea in Matematica, Dipartimento di Matematica, Università degli Studi di Torino.
- AY 2022-2023 *Analisi II* (40 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università di Torino; *Equazioni differenziali* (24 hours), Corso di Laurea in Matematica, Dipartimento di Matematica, Università degli Studi di Torino.
- AY 2021-2022 *Analisi II* (46 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.
- AY 2020-2021 *Analisi II* (46 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.
- AY 2019-2020 *Analisi II* (56 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.
- AY 2018-19 *Analisi II* (50 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.
- AY 2017-18 *Analisi II* (50 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.
- AY 2016-17 *Analisi II* (50 hours), Corso di Laurea in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.
- AY 2015-16 *Analisi matematica I* (56 hours), Corso di Laurea in Matematica per la Finanza e l'Assicurazione, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2013-14 *Analisi matematica I* (64 hours), Corso di Laurea in Matematica per la Finanza e l'Assicurazione, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2012-13 *Analisi matematica I* (56 hours), Corso di Laurea in Matematica per la Finanza e l'Assicurazione, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2011-12 *Analisi matematica I* (40 hours), Corso di Laurea in Matematica per la Finanza e

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

11/20

l'Assicurazione, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.

- AY 2009-10 *Mathematical Analysis I* (64 hours), Prima Facoltà, Politecnico di Torino.
- AY 2008-09 *Calcolo differenziale e integrale* (64 hours), Corso di Laurea Triennale in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.

Teacher in the following courses:

- AY 2011-12 *Calcolo delle probabilità e statistica* (14 hours), Corso di Laurea Triennale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2010-11 *Calcolo delle probabilità e statistica* (14 hours), Corso di Laurea Triennale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino.
- AY 2009-10 *Analisi matematica I* (32 hours), Corso di Laurea Triennale in Matematica, Dipartimento di Matematica G. Peano, Università degli Studi di Torino; *Analisi I* (16 hours), Corso di Laurea Triennale in Fisica, Dipartimento di Fisica, Università degli Studi di Torino.

Student supervision

Ph.D. Students

- 2024– **Edoardo Pucci**, *TBA*.
- 2021– **Gianluca Giacchi**, *Optimal Tuning Parameters in Inverse Problems and their Application to Image Processing and MRI*, (Co-Tutor with B. Franceschiello and N. Arcozzi).
- 2019-2023 **Federico Bastianoni**, *Properties of eigenfunctions of localization operators on modulation spaces*, (Co-Tutor with F. Nicola).
- 2017-2021 **S. Ivan Trapasso**, *Quantizations and Path Integrals: a Time-Frequency Analysis Approach*, (Co-Tutor with F. Nicola).
- 2012-2015 **Michele Berra**, *Frame Based Gaussian Beams for Evolution Equations*.

Graduate (magistrali)

- 2024 **Edoardo Pucci**, *"Wigner Analysis of Linear Operators on Time-frequency Spaces"*.
- 2024 **Vitoria Dos Anjos Vieira Ferreira**, *"Aspects of Geometric Learning with Convolutional Neural Networks"*.
- 2022 **Camilla Gonella**, *"Analisi del segnale sui grafi e Machine Learning"*.
- 2022 **Anna Camera**, *"Analisi del segnale su grafi e interpolazione GBF con funzioni definite positive"*.
- 2022 **Ludovico Bartoli**, *"Anomaly Detection for Time Series using Shapelets"*, Master Degree in Stochastics and Data Science.
- 2022 **Gabriele Bovì**, *"Deep learning, a mathematical approach"*.
- 2020 **Tommaso Bucciarelli**, *"Methods of simplified analyses for the estimation of the power spectral density in thermal space applications"*.
- 2020 **Emanuele Gamba**, *"Signal Processing and Speech"*.
- 2020 **Francesco Moraglio**, *"Rudiments of Neural Cryptography"*, Master Degree in Stochastics and Data Science.
- 2019 **Federico Bastianoni**, *"Decay and Smoothness for Eigenfunctions of Localization Operators"*.

Dipartimento di Matematica "Giuseppe Peano"
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

12/20

- 2019 **Giacomo Cerutti**, “*La Trasformata di Bargmann e applicazioni ai frames di Gaussiane*”.
- 2018 **Francesco Tresso**, “*Gabor Frames. An excursus in the world of time-frequency reconstructions and its basic results*”.
- 2017 **S. Ivan Trapasso**, “*Pseudodifferential Operators on Wiener Amalgam and Modulation Spaces*”.
- 2017 **Lorenza D’Elia**, “*Boundedness of Pseudodifferential Operators on Modulation Spaces*”.
- 2016 **Francesca Pedrazzoli**, “*Wavelets: Theory and Applications*”.
- 2016 **Noemi Montobbio**, “*Variational techniques in encoding fMRI data for cortical architecture modeling*”.
- 2016 **Pietro Donà**, “*Proprietà ottimali di continuità della distribuzione di Wigner negli spazi di modulazione*”.
- 2015 **Serena Mattalia**, “*Introduzione alle Wavelets*”.
- 2015 **Chiara Picco**, “*Analisi Tempo Frequenza e Principio di Indeterminazione di Heisenberg*”.
- 2015 **Elena Marongiu**, “*Rappresentazioni integrali di trasformazioni affini sullo spazio delle fasi*”.
- 2013 **Iulia Martina Bulai**, “*Analisi Tempo-frequenza Discreta*”.
- 2013 **Luca Vogliotti**, “*Gabor Representation of Evolution Operators*”.
- 2012 **Enrico Gianotti**, “*Wiener Property for Fourier Integral Operators*”.
- 2011 **Michele Berra**, “*Time-Frequency Analysis of Fourier Integral Operators and Applications*”.
- 2008 **Davide Zucco**, “*Stime dispersive e di Strichartz per l’equazione di Schrödinger*”.
- 2007 **Francesca Piazza**, “*Analisi Tempo-Frequenza e Teoria dei Frames*”.
- 2007 **Miriam Gastaldi**, “*La rappresentazione metaplettica estesa e applicazioni alla teoria delle ondine*”.
- 2007 **Alice Bidoia**, “*Teoria dell’Interpolazione Reale e Spazi di Lorentz*”.
- 2007 **Sara Arese**, “*Teoria dei frames ed applicazioni ai frames di Gabor*”.
- Undergraduate (triennali)**
- 2022 **Luca Griso**, “*Metodi di regressione lineare*”.
- 2012 **Francesca Stroppiana**, “*Serie di Fourier e sue Applicazioni*”.
- 2016 **Ludovica Vittoria Magnano**, “*I Modelli di Markowitz e Sharpe*”.

Visiting Student

- September-December 2017 **Eva Primo**, *Ph.D. Student at Departament d’Anàlisi Matemàtica, Universitat de València, Dr. Moliner 50, 46100-Burjassot, València (Spain)*, Visiting position at Department of Mathematics G. Peano, University of Torino.

Dipartimento di Matematica “Giuseppe Peano”
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

13/20

Publications

Preprints

4. E. Cordero, G. Giacchi and E. Pucci. Understanding of linear operators through Wigner analysis. arXiv:2405.16448
3. E. Cordero, G. Giacchi and L. Rodino. Wigner kernel and Gabor matrix of operators. *Submitted*. arXiv:2404.08332
2. E. Cordero, G. Giacchi and L. Rodino. A Unified Approach to Time-Frequency Representations and Generalized Spectrogram. *Submitted*. arXiv:2401.03882
1. E. Cordero, G. Giacchi and L. Rodino. Wigner Representation of Schrödinger Propagators. *Submitted*. arXiv:2311.18383v2

Book

E. Cordero and L. Rodino. *Time-Frequency Analysis of Operators*, volume 75 of *De Gruyter Studies in Mathematics*. De Gruyter, Berlin, 2020. ISBN 978-3-11-053035-3

Journal Articles

75. E. Cordero, G. Giacchi, L. Rodino and M. Valenzano. Wigner Analysis of Fourier Integral Operators with symbols in the Shubin classes. *Nonlinear Differ. Equ. Appl.*, 31:69, 2024. <https://doi.org/10.1007/s00030-024-00961-4>
74. E. Cordero, G. Giacchi and L. Rodino. Wigner Analysis of Operators. Part II: Schrödinger equations. *Commun. Math. Phys.*, 405, 156, 2024. <https://doi.org/10.1007/s00220-024-04992-x>
73. E. Cordero and G. Giacchi. Excursus on modulation spaces via metaplectic operators and related time-frequency representations. *Sampl. Theory Signal Process. Data Anal.*, 22, 9, 2024. <https://doi.org/10.1007/s43670-024-00085-x>
72. E. Cordero and G. Giacchi. Metaplectic Gabor Frames and Symplectic Analysis of Time-Frequency Spaces. *Appl. Comput. Harmon. Anal.*, 68:101594, 2024. DOI:10.1016/j.acha.2023.101594
71. P. Balazs, F. Bastianoni, E. Cordero, H.G. Feichtinger and N. Schweighofer. Comparisons between Fourier multipliers and STFT Multipliers: the smoothing effect of the Short-time Fourier transform. *J. Math. Anal. Appl.*, 529(1), 2024. DOI:10.1016/j.jmaa.2023.127579
70. E. Cordero and G. Giacchi. Symplectic Analysis of Time-Frequency Spaces. *J. Math. Pures Appl.*, 177: 154–177, 2023. DOI:10.1016/j.matpur.2023.06.011
69. E. Cordero and L. Rodino. Characterization of modulation spaces by symplectic representations and applications to Schrödinger equations. *J. Funct. Anal.*, 284:109892, 2023. DOI:10.1016/j.jfa.2023.109892

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

14/20

68. E. Cordero and G. Giacchi. Quasi-Banach algebras and Wiener properties for pseudodifferential and generalized metaplectic operators. *J. Pseudo-Differ. Oper. Appl.* 14:9, 2023. DOI:10.1007/s11868-022-00503-5
67. F. Bastianoni and E. Cordero. Quasi-Banach modulation spaces and localization operators on locally compact abelian groups. *Banach J. Math. Anal.* 17(1), 2023. DOI:10.1007/s43037-022-00223-4
66. E. Cordero and L. Rodino. Wigner analysis of operators. Part I: pseudodifferential operators and wave fronts. *Appl. Comput. Harmon. Anal.*, 58:85–123, 2022. DOI:10.1016/j.acha.2022.01.003
65. F. Bastianoni and E. Cordero. Characterization of smooth symbol classes by Gabor matrix decay. *J. Fourier Anal. Appl.*, 28(3), 2022. DOI:10.1007/s00041-021-09895-2.
64. E. Cordero, F. Nicola and S. I. Trapasso. Dispersion, spreading and sparsity of Gabor wave packets for metaplectic and Schrödinger operators. *Appl. Comput. Harmon. Anal.*, 55:405–425, 2021. DOI:10.1016/j.acha.2021.06.007
63. E. Cordero. On the local well-posedness of the nonlinear heat equation associated to the fractional Hermite operator in modulation spaces. *J. Pseudo-Differ. Oper. Appl.*, 12(1):Paper No. 13, 13, 2021. DOI:10.1007/s11868-021-00394-y
62. F. Bastianoni, E. Cordero and F. Nicola. Decay and Smoothness for Eigenfunctions of Localization Operators. *J. Math. Anal. Appl.*, 492(2):124480, 19, 2020. DOI:10.1016/j.jmaa.2020.124480
61. E. Cordero, M. de Gosson, M. Döfler and F. Nicola. Generalized Born-Jordan Distributions and Applications. *Adv. Comput. Math.*, 46(4):Paper No. 51, 22, 2020. DOI:10.1007/s10444-020-09788-w
60. E. Cordero, M. de Gosson and F. Nicola. A characterization of modulation spaces by symplectic rotations. *J. Funct. Anal.*, 278(11):108474, 19, 2020. DOI:10.1016/j.jfa.2020.108474
59. E. Cordero and S. I. Trapasso. Linear perturbations of the Wigner distribution and the Cohen's class. *Anal. Appl. (Singap.)*, 18(3):385–422, 2020. DOI:10.1142/S0219530519500052
58. E. Cordero, M. de Gosson and F. Nicola. On the Positivity of Trace Class Operators. *Adv. Theor. Math. Phys.*, 23(8):2061–2091, 2019. DOI:10.4310/atmp.2019.v23.n8.a4
57. E. Cordero, F. Nicola and S. I. Trapasso. Almost diagonalization of τ -pseudodifferential operators with symbols in Wiener amalgam and modulation spaces. *J. Fourier Anal. Appl.*, 25(4):1927–1957, 2019. DOI:10.1007/s00041-018-09651-z
56. E. Cordero, L. D'Elia and S. I. Trapasso. Norm Estimates for τ -Pseudodifferential operators in Wiener Amalgam and Modulation Spaces. *J. Math. Anal. Appl.*, 471(1-2):541–563, 2019. DOI:10.1016/j.jmaa.2018.10.090
55. E. Cordero and F. Nicola. Kernel Theorems for Modulation Spaces. *J. Fourier Anal. Appl.*, 25(1):131–144, 2019. DOI:10.1007/s00041-017-9573-3
54. E. Cordero, F. Nicola and E. Primo. On Fourier integral operators with Hölder-continuous phase. *Anal. Appl. (Singap.)*, 16(6):875–893, 2018. DOI:10.1142/S02195305185001123

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

15/20

53. E. Cordero, M. de Gosson, M. Döfler and F. Nicola. On the symplectic covariance and interferences of time-frequency distributions. *SIAM J. Math. Anal.*, 50(2):2178–2193, 2018. DOI:10.1137/16M1104615
52. E. Cordero and F. Nicola. Sharp Integral Bounds for Wigner Distributions. *Int. Math. Res. Not. IMRN*, (6):1779–1807, 2018. DOI:10.1093/imrn/rnw250
51. E. Cordero, M. de Gosson and F. Nicola. On the reduction of the interferences in the Born-Jordan distribution. *Appl. Comput. Harmon. Anal.*, 44(2):230–245, 2018. DOI:10.1016/j.acha.2016.04.007
50. E. Cordero, M. de Gosson and F. Nicola. Semi-classical Time-frequency Analysis and Applications. *Math. Phys. Anal. Geom.*, 20(4):Paper No. 26, 23, 2017. DOI:10.1007/s11040-017-9259-8
49. E. Cordero, M. de Gosson and F. Nicola. Born-Jordan Pseudo-Differential Operators with Symbols in the Shubin Classes. *Trans. Amer. Math. Soc. Ser. B*, 4:94–109, 2017. DOI:10.1090/btran/16
48. E. Cordero, M. de Gosson and F. Nicola. Time-frequency Analysis of Born-Jordan Pseudodifferential Operators. *J. Funct. Anal.*, 272(2):577–598, 2017. DOI:10.1016/j.jfa.2016.10.004
47. M. Berra, I. M. Bulai, E. Cordero and F. Nicola. Gabor Frames of Gaussian Beams for the Schrödinger equation. *Appl. Comput. Harmon. Anal.*, 43(1):94–121, 2017. DOI:10.1016/j.acha.2015.11.001
46. E. Cordero, M. de Gosson and F. Nicola. On the Invertibility of Born-Jordan Quantization. *J. Math. Pures Appl. (9)*, 105(4):537–557, 2016. DOI:10.1016/j.matpur.2015.11.007
45. E. Cordero, F. Nicola and L. Rodino. Wave packet analysis of Schrödinger equations in analytic function spaces. *Adv. Math.*, 278:182–209, 2015. DOI:10.1016/j.aim.2015.03.014
44. E. Cordero, F. Nicola and L. Rodino. Exponentially sparse representations of Fourier integral operators. *Rev. Mat. Iberoam.*, 31(2):461–476, 2015. DOI:10.4171/RMI/841
43. E. Cordero, F. Nicola and L. Rodino. Gabor Representations of evolution operators. *Trans. Amer. Math. Soc.*, 367(11):7639–7663, 2015. DOI:10.1090/S0002-9947-2015-06302-8
42. E. Cordero, F. Nicola and L. Rodino. Schrödinger equations with rough Hamiltonians. *Discrete Contin. Dyn. Syst.*, 35(10):4805–4821, 2015. DOI:10.3934/dcds.2015.35.4805
41. E. Cordero, F. Nicola and L. Rodino. Propagation of the Gabor Wave Front Set for Schrödinger Equations with non-smooth potentials. *Rev. Math. Phys.*, 27(1):1550001, 33, 2015. DOI:10.1142/S0129055X15500014
40. E. Cordero, F. Nicola and L. Rodino. Integral Representations for the Class of Generalized Metaplectic Operators. *J. Fourier Anal. Appl.*, 21(4):694–714, 2015. DOI:10.1007/s00041-014-9384-8
39. E. Cordero and F. Nicola. On the Schrödinger equation with potential in modulation spaces *J. Pseudo-Differ. Oper. Appl.*, 5(3):319–341, 2014. DOI:10.1007/s11868-014-0096-2

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

16/20

38. E. Cordero, K. Gröchenig, F. Nicola and L. Rodino. Generalized Metaplectic Operators and the Schrödinger Equation with a Potential in the Sjöstrand Class, *J. Math. Phys.*, 55(8):081506, 17, 2014. DOI:10.1063/1.4892459
37. E. Cordero, J. Toft and P. Wahlberg. Sharp results for the Weyl product on modulation spaces. *J. Funct. Anal.*, 267(8):3016–3057, 2014. DOI:10.1016/j.jfa.2014.07.011
36. E. Cordero, A. Tabacco and P. Wahlberg. Schrödinger type propagators, pseudodifferential operators and modulation spaces. *J. Lond. Math. Soc. (2)*, 88(2):375–395, 2013. DOI:10.1112/jlms/jdt020
35. E. Cordero and A. Tabacco. Triangular Subgroups of $Sp(d, \mathbb{R})$ and Reproducing Formulae. *J. Funct. Anal.*, 264(9):2034–2058, 2013. DOI:10.1016/j.jfa.2013.02.004
34. E. Cordero, K. Gröchenig, F. Nicola and L. Rodino. Wiener algebras of Fourier integral operators. *J. Math. Pures Appl.*, 99(2):219–233, 2013. DOI:10.1016/j.matpur.2012.06.012
33. E. Cordero and K. Okoudjou. Dilations properties for weighted modulation spaces. *J. Funct. Spaces Appl.*, pages Art. ID 145491, 29, 2012. DOI:10.1155/2012/145491
32. E. Cordero, K. Gröchenig and F. Nicola. Approximation of Fourier Integral Operators by Gabor Multipliers. *J. Fourier Anal. Appl.*, 18(4):661–684, 2012. DOI:10.1007/s00041-011-9214-1
31. E. Cordero and F. Nicola. Sharp Continuity Results for the Short-Time Fourier Transform and for Localization Operators. *Monatsh. Math.*, 162(3):251–276, 2011. DOI:10.1007/s00605-010-0210-3
30. E. Cordero and D. Zucco. Strichartz estimates for the vibrating plate equation. *J. Evol. Equ.*, 11(4):827–845, 2011. DOI: 10.1007/s00028-011-0113-3
29. E. Cordero and D. Zucco. The Cauchy Problem for the Vibrating Plate Equation in Modulation Spaces. *J. Pseudo-Differ. Op. and Appl.*, 2(3):343–354, 2011. DOI:10.1007/s11868-011-0032-7
28. E. Cordero and L. Rodino. Time-Frequency Analysis: Function Spaces and Applications. *Note Mat.*, 31(1):173–189, 2011.
27. E. Cordero and F. Nicola. Boundedness of Schrödinger Type Propagators on Modulation Spaces. *J. Fourier Anal. Appl.*, 16(3):311–339, 2010. DOI:10.1007/s00041-009-9111-z
26. E. Cordero and F. Nicola. Pseudodifferential Operators on L^p , Wiener Amalgam and Modulation Spaces. *Int. Math. Res. Not. IMRN*, (10):1860–1893, 2010. DOI:10.1093/imrn/rnp190
25. E. Cordero and D. Zucco. Strichartz Estimates for The Schrödinger Equation. *Cubo*, 12(3):213–239, 2010. DOI:10.4067/s0719-06462010000300014
24. E. Cordero, F. De Mari, K. Nowak, and A. Tabacco. Dimensional upper bounds for admissible subgroups for the metaplectic representation. *Math. Nachr.*, 283(7):982–993, 2010. DOI:10.1002/mana.200710062
23. E. Cordero, S. Pilipović, L. Rodino and N. Teofanov. Quasianalytic Gelfand-Shilov spaces and localization operators, *Rocky Mountain J. Math.*, 40(4):1123–1147, 2010. DOI:10.1216/RMJ-2010-40-4-1123

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

17/20

22. E. Cordero, F. Nicola and L. Rodino. Time-frequency Analysis of Fourier Integral Operators. *Commun. Pure Appl. Anal.*, 9(1):1–21, 2010. DOI:10.3934/cpaa.2010.9.1
21. E. Cordero, F. Nicola and L. Rodino. On the Global Boundedness of Fourier Integral Operators. *Ann. Global Anal. Geom.*, 38(4):373–398, 2010. DOI:10.1007/s10455-010-9219-z
20. E. Cordero, F. Nicola and L. Rodino. Boundedness of Fourier Integral Operators on \mathcal{FL}^p spaces. *Trans. Amer. Math. Soc.*, 361(11):6049–6071, 2009. DOI:10.1090/S0002-9947-09-04848-X
19. E. Cordero and F. Nicola. Remarks on Fourier multipliers and applications to the Wave equation. *J. Math. Anal. Appl.*, 353(2):583–591, 2009. DOI:10.1016/j.jmaa.2008.12.027
18. E. Cordero, F. Nicola and L. Rodino. Sparsity of Gabor representation of Schrödinger propagators. *Appl. Comput. Harmon. Anal.*, 26(3):357–370, 2009. DOI:10.1016/j.acha.2008.08.003
17. E. Cordero and F. Nicola. Sharpness of some properties of Wiener amalgam and modulation spaces. *Bull. Aust. Math. Soc.*, 80(1):105–116, 2009. DOI:10.1017/S0004972709000070
16. E. Cordero and F. Nicola. Strichartz estimates in Wiener amalgam spaces for the Schrödinger equation. *Math. Nachr.*, 281(1): 25–41, 2008. DOI:10.1002/mana.200610585
15. E. Cordero and F. Nicola. Metaplectic representation on Wiener amalgam spaces and applications to the Schrödinger equation. *J. Funct. Anal.*, 254(2):506–534, 2008. DOI:10.1016/j.jfa.2007.09.015
14. E. Cordero and F. Nicola. Some new Strichartz estimates for the Schrödinger equation. *J. Differential Equations*, 245(7):1945–1974, 2008. DOI:10.1016/j.jde.2008.07.009
13. E. Cordero. Gelfand-Shilov Window Classes for Weighted Modulation Spaces. *Integral Transforms Spec. Funct.*, 18(11-12):829–837, 2007. DOI:10.1080/10652460701510709
12. E. Cordero and K. Okoudjou. Multilinear localization operators. *J. Math. Anal. Appl.*, 325(2):1103–1116, 2007. DOI:10.1016/j.jmaa.2006.02.040
11. E. Cordero, F. De Mari, K. Nowak, and A. Tabacco. Analytic features of reproducing groups for the metaplectic representation. *J. Fourier Anal. Appl.*, 12(2):157–180, 2006. DOI:10.1007/s00041-005-5016-7
10. E. Cordero and K. Gröchenig. Symbolic calculus and Fredholm property for localization operators. *J. Fourier Anal. Appl.*, 12(4):371–392, 2006. DOI:10.1007/s00041-005-5077-7
9. E. Cordero. M -channel MRA and application to anisotropic Sobolev spaces. *Int. J. Wavelets Multiresolut. Inf. Process.*, 3(2):153–166, 2005. DOI:10.1142/S0219691305000865
8. E. Cordero and L. Rodino. Wick calculus: a time-frequency approach, *Osaka J. Math.*, 42(1):43–63, 2005.
7. E. Cordero and K. Gröchenig. Necessary conditions for Schatten class localization operators. *Proc. Amer. Math. Soc.*, 133(12):3573–3579, 2005. DOI:10.1090/S0002-9939-05-07897-4

Dipartimento di Matematica "Giuseppe Peano"

via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

18/20

6. E. Cordero, S. Pilipović, L. Rodino and N. Teofanov. Localization operators and exponential weights for modulation spaces, *Mediterr. J. Math.*, 2(4):381–394, 2005. DOI:10.1007/s00009-005-0052-8
5. P. Boggiatto, E. Cordero, and K. Gröchenig. Generalized Anti-Wick operators with symbols in distributional Sobolev spaces. *Integral Equations Operator Theory*, 48(4):427–442, 2004. DOI:10.1007/s00020-003-1244-x
4. E. Cordero and K. Gröchenig. Localization of frames II. *Appl. Comput. Harmon. Anal.*, 17(1):29–47, 2004. DOI:10.1016/j.acha.2004.02.002
3. E. Cordero. Wavelet MRA on the interval with dilation factor M . *Rend. Sem. Mat. Univ. Politec. Torino*, 62(1):39–57, 2004.
2. E. Cordero and K. Gröchenig. Time-frequency analysis of Localization operators. *J. Funct. Anal.*, 205(1):107–131, 2003. DOI:10.1016/S0022-1236(03)00166-6
1. P. Boggiatto and E. Cordero. Anti-Wick quantization with symbols in L^p spaces. *Proc. Amer. Math. Soc.*, 130(9):2679–2685, 2002. DOI:10.1090/S0002-9939-02-06348-7

Book Chapters

17. E. Cordero, M. de Gosson, M. Döfler and F. Nicola. Signal Analysis using Born-Jordan-type Distributions. *Excursions in Harmonic Analysis, Volume 6*, M. Hirn, S. Li, K. Okoudjou, S. Saliani, Ö. Yilmaz (eds.), Birkhäuser Basel, 2021. ISBN 978-3-030-69636-8
16. E. Cordero. Note on the Wigner distribution and Localization Operators in the quasi-Banach setting. *Anomalies in Partial Differential Equations*, M. Cicognani et al. (eds.), Springer INdAM Series 43:149–166, 2021. ISBN 978-3-030-61345-7
15. D. Bayer, E. Cordero, K. Gröchenig and S. I. Trapasso. Linear perturbations of the Wigner transform and the Weyl quantization. In *Advances in microlocal and time-frequency analysis*, Appl. Numer. Harmon. Anal., pages 79–120. Birkhäuser/Springer, Cham, 2020. ISBN 978-3-030-36137-2
14. E. Cordero, F. Nicola and L. Rodino. Gabor Analysis for Schrödinger Equations and Propagation of Singularities. In *Recent trends in operator theory and partial differential equations*, volume 258 of *Oper. Theory Adv. Appl.*, pages 257–274. Birkhäuser/Springer, Cham, 2017. ISBN 978-3-319-47079-5
13. E. Cordero, F. Nicola and L. Rodino. Gabor wave packets and evolution operators. In *Pseudo-differential operators and generalized functions*, volume 245 of *Oper. Theory Adv. Appl.*, pages 45–59. Birkhäuser/Springer, Cham, 2015. ISBN 978-3-319-14617-1
12. E. Cordero, F. Nicola and L. Rodino. A few remarks on time-frequency analysis of Gevrey, analytic and ultra-analytic functions. In *Fourier analysis*, Trends Math., pages 73–90. Birkhäuser/Springer, Cham, 2014. ISBN 9783319025490

Dipartimento di Matematica "Giuseppe Peano"
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

19/20

11. E. Cordero, F. Nicola and L. Rodino. Schrödinger equations in modulation spaces. In *Studies in phase space analysis with applications to PDEs*, volume 84 of *Progr. Nonlinear Differential Equations Appl.*, pages 81–99. Birkhäuser/Springer, New York, 2013. ISBN 9781461463474
10. E. Cordero, F. Nicola and L. Rodino. Time-Frequency Analysis of Schrödinger propagators. In *Evolution equations of hyperbolic and Schrödinger type*, volume 301 of *Progr. Math.*, pages 63–85. Birkhäuser/Springer Basel AG, Basel, 2012. ISBN 978-3-0348-0453-0
9. E. Cordero and F. Nicola. Some Remarks on Localization Operators. In *Pseudo-differential operators: analysis, applications and computations*, volume 213 of *Oper. Theory Adv. Appl.*, pages 289–305. Birkhäuser/Springer Basel AG, Basel, 2011. ISBN 978-3-0348-0048-8
8. H. Feichtinger, F. Luef, and E. Cordero. Banach Gelfand triples for Gabor analysis, In *Pseudo-differential operators*, volume 1949 of *Lecture Notes in Math.*, pages 1–33. Springer, Berlin, 2008. DOI:10.1007/978-3-540-68268-4_1
7. E. Cordero and L. Rodino. Short-Time Fourier Transform Analysis of Localization Operators. In *Frames and operator theory in analysis and signal processing*, volume 451 of *Contemp. Math.*, pages 47–68. Amer. Math. Soc., Providence, RI, 2008. DOI:10.1090/conm/451/08757
6. E. Cordero, K. Gröchenig. On the product of localization operators. In *Modern trends in pseudo-differential operators*, volume 172 of *Oper. Theory Adv. Appl.*, pages 279–295. Birkhäuser, Basel, 2007. DOI:10.1007/978-3-7643-8116-5_16
5. E. Cordero, K. Gröchenig and L. Rodino. Localization Operators and Time-Frequency Analysis. In *Harmonic, wavelet and p -adic analysis*, pages 83–110. World Sci. Publ., Hackensack, NJ, 2007. DOI:10.1142/9789812770707_0005
4. E. Cordero, F. De Mari, K. Nowak, and A. Tabacco. Reproducing groups for the metaplectic representation. In *Pseudo-differential operators and related topics*, volume 164 of *Oper. Theory Adv. Appl.*, pages 227–244. Birkhäuser, Basel, 2006. DOI:10.1007/3-7643-7514-0_16
3. E. Cordero, F. Nicola and L. Rodino. Microlocal Analysis and applications. In *Advances in pseudo-differential operators*, volume 155 of *Oper. Theory Adv. Appl.*, pages 1–17. Birkhäuser, Basel, 2004.
2. E. Cordero and A. Tabacco. Localization Operators via Time-Frequency Analysis. In *Advances in pseudo-differential operators*, volume 155 of *Oper. Theory Adv. Appl.*, pages 131–147. Birkhäuser, Basel, 2004.
1. P. Boggiatto and E. Cordero. Anti-Wick quantization of tempered distributions. In *Progress in analysis, Vol. I, II (Berlin, 2001)*, pages 655–662. World Sci. Publ., River Edge, NJ, 2003.

Proceedings

1. E. Cordero and G. Giacchi. Metaplectic Gabor frames of Wigner-Decomposable Distributions. *4th International Conference and Summer School "Numerical Computations: Theory and Algorithms" (NUMTA 2023)*, to appear. arXiv:2304.14689

Dipartimento di Matematica "Giuseppe Peano"
via C. Alberto 10, 10123 Torino, Italy

☎ (+39) 011 6702863 • ☎ (+39) 011 6702878

✉ elena.cordero@unito.it

<http://orcid.org/0000-0002-2885-4644>, ScopusID:7003893630

20/20