Curriculum di Giovanna Citti

Education

1986 – 89 **graduated studies** in Rome, and in Minneapolis (Minnesota - USA)
1985 **laurea degree** in Mathematical analysis from the University of Bologna

Academic position

1/10/2004 – present Professore ordinario in Mathematical analysis at the University of Bologna,
1/10/2001 – 1/10/2004 Professore straordinario (Full Professor) in Mathematical analysis at the University of Bologna,
1992 – 2000 **Associated professor**, Mathematical analysis
1990 – 1991 **Research Professor** in Mathematical analysis - University of Bologna

Other positions

2021 – 31 ottobre 2024 seconded at the interdisciplinar Linceo center Beniamino Segre, (Accademia dei Lincei, Roma), IT
2014 – associated Member of CAMS - EHESS (Paris)
2006- 2008 Director of Master in Mathematics and Applications of Math Department, University of Bologna,
2006- 2008 Director of the local unit of the group **Neuromathematics and Vision** It is an interdipartimental group, composed by members Department of Mathematics and Department of Electronics, Information and Systems, of University of Bologna, Centre de Recherche en Epistemologie Appliquée of Ecole Polytechnique, Paris.
2013-2019 Coordinator of the PhD school in Mathematics
2006- present Member of the scienfic commitee of the PHD school of Mathematics in Bologna.

Coordination activities and Grants

- 2023 – now PI of the project Regularity problems in sub-Riemannian structures PRIN 2022 Participant 3 Italian universities. Funded by MIUR for 180.600 Euro
- 2023- now WP leader of the project } MNESYS, A multiscale integrated approach to the study of the nervous system in health and disease, H2020-EIC-FETPROACT-2019- 951910-MAIA and PNRR - Project PE12 -PE000006. With the participation of 12 Italian universities, funded by the Italian minister of University. Grant for 10.008.900 Euros.
- 2017 - oggi Coordinator of the H2020 MSCA RISE project GHAIA (2017-23) n. 777822. : geometric and harmonic analysis with interdisciplinary applications with the participations of 7 European Universities and 18 extra European, and a total grant of 1.930.000 Euros.

- 2020 - 2021 PI del Progetto alte competenze per la ricerca e il trasferimento tecnologico POR FSE 2014/2020 Obiettivo tematico 10, Un modello di deep learning ispirato alla corteccia visiva e applicazioni a strumenti di precisione per controllo automatico. (grant 30.000)
- 2018 - 2021 responsabile del Progetto alte competenze per la ricerca e il trasferimento tecnologico Metodi matematici e di analisi dati per modelli di corteccia visiva, diagnostica medica e apprendimento automatico: finanziamento di una borsa di dottorato (60.000 euro)
- 2014-2018 Coordinator of the FP7 MSCA ITN MANET n. 607643 Metric analysis for emergent technologies, with the participations of 8 European Universities and a total grant of 3.600.000 Euros (finanziamento 3 663 975,82).
- 2014-2022 Coordinator of the project AGAPE – Analysis in Lie Groups and Applications to Perceptual Emergences (with members of the math department, University of Bologna and the CAMS, EHESS (Paris), Madrid.
- 2009-2013 Coordinator of the EACEA Project EU-US CAP – Complex Analysis and PDE mobility n.2973/001-001 CPT EU-US EIM the project promotes mobility in this field, for graduate students in mathematics
- 2010 - 2013 Responsible of a WP within the EU project Fp7 CG-DICE - Dimension Phenomena and Curvature Equations in Carnot Groups
- 2006-2008 Coordinator of the European GALA Nest EU project n. 28766 – Geometric analysis in Lie groups and Applications. with the participations of 8 Univeristy, and a total grant of 1.000.000 Euros.
- 2006-2008 Coordinator for the math department f the interdipartimental project of "Neuromathematics and Visual Cognition"
- 2004 -2006 Local coordinator of the Europeo ALFA project II-0366-FA Computer vision foundations and applications for the Department of Math – Bologna
- 2004-2005 Local coordinator of the project Geometrical and Numerical analysis for image processing, of the University of Bologna.

Organization of conferences and workshops in the last 10 years

- Co-organizer of a workshop at Accademia Nazionale dei Lincei, September 12-13 2024
- Co-organized or the conference Sub-Riemannian Geometry, Harmonic Analysis, PDEs and Applications Department of Mathematics, University of Bologna, Italy3-5 2024 July Bologna
- Coorganzer of the periodic seminar **Neuromathematics and vision**, 2018-21 Collège de france
- Coorganzer of the conference Recent progress in Geometric Analysis and PDE: 16 -18settembre 2021 Bologna
- Coorganzer of the periodic seminar Dynamiques post-structurelles, 2019-21 EHESS, Paris
- Coorganzer of the course Spazi di funzioni olomorfe con nucleo riproducente (Arcozzi - Bufetov) january 2020 - Bologna
- Coorganzer of the conference Mathematics at the Movies 14OCT - 02DEC2019 - Bologna
- Coorganzer of the conference Intelligent Machines and Mathematics 28JAN2019 Bologna
- Coorganzer of the conference Geometric and Harmonic analysis GHAIA Workshop 25JAN - 26JAN2019 / BOLOGNA
- Coorganzer of the conference Neuromathematics of Vision 29MAY2018 Bologna
- Coorganzer of the conference Sub-Riemannian Geometry Harmonic Analysis, PDE and Applications 24JAN - 27JAN2018 Bologna
- Coorganzer of the Geometric and Harmonic analysis meeting (GHAIA) 26JAN2018 Bologna
- Coorganizer of the conference: Sub-Riemannian Geometry Harmonic Analysis24 – 29 January

2017 Bologna
- Coorganizer of the summer school: Neurogeometry: 2 – 14 July 2017 Cortona Italy
- Coorganizer of the conference 9 - 10 Jun 2016: Two-day Meeting on linear and nonlinear PDE's in honor of the 65th birthday of Cristian Gutierrez Bologna (Italy)
- Coorganizer with J.P. Gauthier (Toulon), J. Petitot (Paris), A. Sarti (Paris), Geometrical models in vision. Oct 22 - Oct 24 2014 IHP Paris
- Coorganizer of the conference Geometric methods in PDE's Cortona (AR Italy) - May 27-31, 2013

A short list of talks delivered in the last 10 years

1. Accademia del Lincei Analisi e PDEs per le Neuroscienze cognitive, 7 febbraio 2024,
2. Schauder estimates at the boundary in Carnot groups, 1 dicembre 2023 Firenze
3. A geometric model of hand area of the the motor cortex, 23 marzo 2023, Padova
4. A geometric model of the visual and motor cortex, ICERM 17 ottobre 2023
5. A subriemannian model of visual perception, WPI September 25 2023
6. A sub-Riemannian model of hand area of the motor cortex, Madrid 28 aprile 2023
7. Mittag Leffler institute: Schauder estimates at the boundary in Carnot groups, 22 november 2022
8. Lie symmetries in CNNs and in the visual cortex, 30 agosto Genova
9. Hölder regularity for weak solutions of Kolmogorov equations with measurable coefficients Dipartimento di Matematica dell'Università di Modena e Reggio Emilia, 11 luglio 2022,
10. A system Identification problem expressed via Lipschitz regularized neural Network , CAMS EHESS, Paris, 27 giugno 2022,
11. Analisi e PDEs per le neuroscienze cognitive, Accademia dei Lincei
12. Double layer potential method for Schauder estimates in the Heisenberg group, within the AMS Special Session on Analysis and Probability in Sub-Riemannian Geometry, March, 27, 2022.
13. Lie symmetries in CNN architectures, Trento, 17 Marzo 2022.
14. Un modello operatoriale di eterogenesi differenziale, Urbino, 8 settembre 2021
15. Submanifolds of fixed degree for perceptual completion 5th conference on Geometric Science of Information in PARIS, Sorbonne University, july 2021
16. Regularity of solutions of prescribed Levi curvature equation, Bologna, 21 aprile 2021
17. Degree preserving variational formulas On line seminar Geometric and functional inequalities and applications, december 2020
18. Submanifolds of fixed degree, in the occasion of the 80-th birthday of D. Alekseevsky september 2020.
19. Schauder estimates, SNS Pisa, aprile 2020
20. The geometry of the visual cortex, (short course) Fields Instutute february 2020
21. Un modèle différentiel du devenir hétérogène, ENS Paris, 16 december 2019
22. Schauder estimates at the boundary in Carnot groups, WPI, november 2019
23. Schauder estimates at the boundary in Carnot groups, John Hopkins, november 2019
24. The geometry of the visual cortex, (short course) within the school Mathematical Models and Methods in Life Sciences 17 - 28 september 2018 Granada
25. Neurogeometry and Perception 19-20 june, Institute of advanced study, Paris
26. Stime di Schauder in gruppi di Carnot, Catania, 20 marzo, 2018
27. Schauder estimates in Carnot groups, Pisa febbraio 2018
28. Riemannian approximation of subelliptic PDE in Carnot groups, january 2018, withing 2018 Taipei Conference on Geometric Invariance and PDE, Jan.17-20, Taipei

29. Séance introductive du séminaire Neuromatheamique, Collège de France, Paris Mardi 9 janvier 2018
30. Schauder estimates at the boundary in Carnot groups, november 21, 2017 MIT, MA
31. A subriemannian model of visual peception, novembre 13 2017, WPI, MA
32. Regularity at the boundary for Subelliptic PDE AIM, S. José, CA. 8 november 2017, within Analysis and geometry on pseudohermitian manifolds
33. PDE in Lie groups, 20 ottobre 2017, Madrid
34. A cortically based system of PDEs in Lie groups for modal completion at the International Workshop on Geometry, PDE's and Lie Groups in Image Analysis 24-26 August 2016 – Eindhoven
35. 20 - 23 Jun 2016: Singular Phenomena and Singular Geometries Department of Mathematics, University of Pisa
36. Two nonllinear days in Urbino, 7-8 july 2016
37. Invited talk: motion by curvature in Heisenberg group within the workshop New trends in non linear PDE 20-24 june 2016, cardiff, uk http://sites.maths.cf.ac.uk/ntnlpde16/programme/
38. Talk all'interno del workshop geometrie e filosofie dall'ottocento ad oggi, 7-8 maggio 2015, Centro studi Enriquez, Firenze
39. Short course Schauder estimates at the boudary in the Heisenberg gorup, within Phase transition problems in non linear PDE Bologna departiment of mathematics 9-11 march 2015 http://phasetransition.dm.unibo.it/
40. Visit to Mathematical Sciences department, WORCESTER POLYTECHNIC INSTITUTE october 26-30 2015
41. Motion by curvature in the subriemannian Heisenberg group Friday, October 23, 2015 –at Differential Geometry & Geometric Analysis Seminar Princeton https://www.math.princeton.edu/events/seminars/differential-geometry-geometric-analysis-seminar/motion-curvature-subriemannian
42. Short course Riemannian approximation of subriemannian structures at ninth school on analysis and geometry in metric spaces 6 Jul 2015 to 10 Jul 2015
43. Invited Talk The visual cortex as a Lie group with a subriemannian metric within the Workshop "Harmonic Analysis, PDEs and Vision". Universidad Aut´onoma de Madrid, 18-9- 2014
44. Invited talk Schauder estimates at non characteristic boundary points in carnot groups within the workshop Geometric analysis on subriemannian manifolds, Paris september, 29 october 3 2014
45. Invited talk Convergence of total variation flow on the Heisenberg group to a minimal graph, within the workshop Thematic day on minimal surfaces in sub-Riemannian geometry IHP, Paris, France, October 13th, 2014
46. A cortical inspired, geometrical model for contour perception and motion integration, Colloquia Patavina: martedì 16 Aprile 2013, Padova
47. Invited talk at conference The 5th Symposium on Analysis & PDEs Purdue University, May 20–23, 2012
48. Invited talk at the conference Sub-Riemannian Geometry and PDEs, July 2.nd-5.th, 2012, Levico Terme
49. Invited course on Regularity of minimal surfaces in the sub-Riemannian Heisenberg groups, Facultad de Ciencias 18-20 june 2012, Gradana (Spain)
50. Invited talk at PDE Seminar, University of Minneapolis, April 2012.
51. Invited talk at Department of applied math Yale University "A subriemannian model of the primary visual cortex," Wed, 11 Apr 2012
52. Talk at Insitut Henri Poincaré, march 2011

Students

- director of 40 Bachelor or master thesis.

Advisor of PhD students:

C. Senni (Prescribed mean curvature graphs on exterior domains of the hyperbolic plane),

G. Sanguinetti (A model of natural image edge co-occurrence in the rototranslation group- cotutoring with A. Sarti, CAMS, EHESS Paris),

G. Cocci (Spatio-temporal models of the functional architecture of the visual cortex - cotutoring with A. Sarti, CAMS, EHESS Paris),

M. Favali (Formal models of visual perception based on cortical architectures- cotutoring with A. Sarti, CAMS, EHESS Paris),

B. Franceschiello, (Cortical Based mathematical models of geometric optical illusions - cotutoring with A. Sarti, CAMS, EHESS Paris),

E. Baspinar (Minimal Surfaces in Sub-Riemannian Structures and Functional Geometry of the Visual Cortex - double degree: Unibo (Citti) and ED3C (A. Sarti, CAMS, EHESS Paris),

G. Giovannardi: Variations for submanifolds of fixed degree - double degree: Unibo (Citti) and Granada - Spain (M. Ritoré)

N. Montobbio (A metric model of the visual cortex - double degree: Unibo (Citti) and ED3C (A. Sarti, CAMS, EHESS Paris),

M. Bolelli, Neurogeometry of stereo vision - double degree: Unibo (Citti) and Sorbonne Université (A. Sarti, CAMS, EHESS Paris),

C. Mazzetti, Neurogeometry of reaching- double degree: Unibo (Citti) and Sorbonne Université (A. Sarti, CAMS, EHESS Paris),

co-direttore di tesi di E. Negrini “Robust Deep Learning Algorithms for System Identification”,

M. Circelli Congested optimal transport in the Heisenberg group

Advisor of the postdoc students:

Cosimo Senni

Gonzalo Sanguinetti

Matteo Galli

Emre Baspinar

Vira Markascheva

Gianmarco Giovannardi

Mattia Francesco Galeotti

Vasiliki Leontou

Teaching activity

Giovanna Citti gave the courses of

- Calculus I, Calculus II, Applied partial differential equations at the Engineering Faculty of University of Bologna, Italy.

- Mathematics method of visual perception (2005) for phd students at the University of Bologna

- Minimal surfaces for phd students at the University of Bologna

- introduction to functional analysis

- non linear Analysis

- biomedical models

Pubblications of the last 10 years

Citti, G., Giovannardi, G., Sire, Y. Schauder estimates up to the boundary on H-type groups: an approach via the double layer potential, Annali di Matematica, accepted 2024

Bolelli, M.V., Citti, G., Sarti, A., Zucker, S.W. Good continuation in 3D: the neurogeometry of stereo vision Frontiers in Computer Science, 2023, 5.

Negrini, E., Citti, G., Capogna, L. Robust Neural Network Approach to System Identification in the High-Noise Regime Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2023, 14286 LNCS, pp. 165–178

Galeotti, M., Citti, G., Sarti, A. Differential Operators Heterogenous in Orientation and Scale in the V1 Cortex Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2023, 14072 LNCS, pp. 465–473

Mazzetti, C., Sarti, A., Citti, G. A Sub-Riemannian Model of the Functional Architecture of M1 for Arm Movement Direction Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2023, 14072 LNCS, pp. 483–492

Bolelli, M.V., Citti, G., Sarti, A., Zucker, S. A Neurogeometric Stereo Model for Individuation of 3D Perceptual Units Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2023, 14071 LNCS, pp. 53–62

Capogna, L., Citti, G., Zhong, X. Regularity Theory of Quasilinear Elliptic and Parabolic Equations in the Heisenberg Group, Vietnam Journal of Mathematics, 2023

Capogna, L., Citti, G., Zhong, X. Lipschitz regularity for solutions of the parabolic p-Laplacian in the Heisenberg group | Heisenbergin ryhmän parabolisen p-Laplacen yhtälön ratkaisuiden Lipschitzin-säännöllisyys Annales Fennici Mathematici, 2023, 48(2), pp. 411–428

Galeotti, M., Citti, G., Sarti, A. Cortically Based Optimal Transport Journal of Mathematical Imaging and Vision, 2022, 64(9), pp. 1040–1057

Citti, G., Mukherjee, S. Regularity of quasi-linear equations with Hörmander vector fields of step two Advances in Mathematics, 2022, 408, 108593

Citti, G., Sarti, A. Neurogeometry of Perception: Isotropic and Anisotropic Aspects Axiomathes, 2022, 32(5), pp. 817–840

Mazzetti, C., Sarti, A., Citti, G. Functional architecture of M1 cells encoding movement direction Journal of Computational Neuroscience, 2022, 51(3), pp. 299–327

Citti, G., Giovannardi, G., Ritoré, M. Variational formulas for curves of fixed degree Advances in Differential Equations, 2022, 27(5-6), pp. 333–384

Bertoni, F., Citti, G., Sarti, A. LGN-CNN: A biologically inspired CNN architecture Neural Networks, 2022, 145, pp. 42–55

Citti, G., Giovannardi, G., Ritoré, M. Variational formulas for submanifolds of fixed degree Calculus of Variations and Partial Differential Equations, 2021, 60(6), 233

Bertoni, F., Montobbio, N., Sarti, A., Citti, G. Emergence of Lie Symmetries in Functional Architectures Learned by CNNs Frontiers in Computational Neuroscience, 2021, 15, 694505

Negrini, E., Citti, G., Capogna, L. System identification through Lipschitz regularized deep neural networks Journal of Computational Physics, 2021, 444, 110549

Citti, G., Giovannardi, G., Ritoré, M., Sarti, A.Submanifolds of Fixed Degree in Graded Manifolds for Perceptual Completion Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 2021, 12829 LNCS, pp. 47–55

Sarti, A., Citti, G., Piotrowski, D., Differential heterogenesis and the emergence of semiotic function | L'hétérogénèse différentielle et l'émergence de la fonction sémiotique Signata, 2021, 2021(12), pp. 1–33

Capogna, L., Citti, G., Garofalo, N. Regularity for a class of quasilinear degenerate parabolic equations in the Heisenberg group Mathematics In Engineering, 2021, 3(1), pp. 1–31

Baspinar, E., Sarti, A., Citti, A sub-Riemannian model of the visual cortex with frequency and phase G. Journal of Mathematical Neuroscience, 2020, 10(1), 11

Montobbio, Noemi; Sarti, Alessandro; Citti, Giovanna; A Metric Model for the Functional Architecture of the Visual Cortex. SIAM J. Appl. Math. 80 (2020), no. 2, 1057–1081.

Baldi, Annalisa; Citti, Giovanna; Cupini, Giovanni Schauder estimates at the boundary for sub-laplacians in Carnot groups. Calc. Var. Partial Differential Equations 58 (2019), no. 6, Paper No. 204, 43 pp.

Baspinar, E.; Citti, G. Uniqueness of viscosity mean curvature flow solution in two sub-Riemannian structures. SIAM J. Math. Anal. 51 (2019), no. 3, 2633–2659. (Reviewer: Nicolas Juillet) 53C17 (35K55 53C44)

Montobbio, Noemi; Citti, Giovanna; Sarti, Alessandro From receptive profiles to a metric model of V1. J. Comput. Neurosci. 46 (2019), no. 3, 257–277.

Franceschiello, B.; Mashtakov, A.; Citti, G.; Sarti, A. Geometrical optical illusion via sub-Riemannian geodesics in the roto-translation group. Differential Geom. Appl. 65 (2019), 55–77.

Capogna, Luca; Citti, Giovanna; Le Donne, Enrico; Ottazzi, Alessandro; Conformality and Q-harmonicity in sub-Riemannian manifolds. J. Math. Pures Appl. (9) 122 (2019), 67–124. 53C17 (35H20 58C25)

Baspinar, Emre; Citti, Giovanna; Sarti, Alessandro A geometric model of multi-scale orientation preference maps via Gabor functions. J. Math. Imaging Vision 60 (2018), no. 6, 900–912. 53Z05 (94A08)

Duits, Remco; Citti, Giovanna; Fuster, Andrea; Schultz, Thomas Differential geometry and orientation analysis in image processing. J. Math. Imaging Vision 60 (2018), no. 6, 763–765. 94-06 (53-06)

Franceschiello, B.; Sarti, A.; Citti, G. A neuromathematical model for geometrical optical illusions. J. Math. Imaging Vision 60 (2018), no. 1, 94–108. 94A08

Abbasi-Sureshjani, Samaneh; Favali, Marta; Citti, Giovanna; Sarti, Alessandro; ter Haar Romeny, Bart M. Curvature integration in a 5D kernel for extracting vessel connections in retinal images. IEEE Trans. Image Process. 27 (2018), no. 2, 606–621. 94A08

Favali, Marta; Citti, Giovanna; Sarti, Alessandro Local and global Gestalt laws: a neurally based spectral approach. Neural Comput. 29 (2017), no. 2, 394–422. 92B20 (92B15)

Franceschiello, Benedetta; Sarti, Alessandro; Citti, Giovanna Mathematical models of visual perception for the analysis of geometrical optical illusions. Mathematical and theoretical neuroscience, 135–149, Springer INdAM Ser., 24, Springer, Cham, 2017. 92C30

Favali, Marta; Citti, Giovanna; Sarti, Alessandro Mathematical models of visual perception based on cortical architectures. Mathematical and theoretical neuroscience, 123–133, Springer INdAM Ser., 24, Springer, Cham, 2017. 92C30 (82C31)

Franceschiello, B.; Mashtakov, A.; Citti, G.; Sarti, A. Modelling of the Poggendorff illusion via sub-Riemannian geodesics in the roto-translation group. New trends in image analysis and processing—ICIAP 2017, 37–47, Lecture Notes in Comput. Sci., 10590, Springer, Cham,2017. 94A08

Capogna, Luca; Citti, Giovanna Regularity for subelliptic PDE through uniform estimates in multi-scale geometries. Bull. Math. Sci. 6 (2016), no. 2, 173–230.

Citti, Giovanna; Manfredini, Maria; Pinamonti, Andrea; Serra Cassano, Francesco Poincaré-type inequality for Lipschitz continuous vector fields. J. Math. Pures Appl. (9) 105(2016), no. 3, 265–292.

Citti, G.; Franceschiello, B.; Sanguinetti, G.; Sarti, A. Sub-Riemannian mean curvature flow for image processing. SIAM J. Imaging Sci. 9 (2016), no. 1, 212–237.
Cocci, Giacomo; Barbieri, Davide; Citti, Giovanna; Sarti, Alessandro Cortical spatiotemporal dimensionality reduction for visual grouping. Neural Comput. 27 (2015), no. 6, 1252–1293. 92B20

Bonfiglioli, Andrea; Citti, Giovanna; Cupini, Giovanni; Manfredini, Maria; Montanari, Annamaria; Morbidelli, Daniele; Pascucci, Andrea; Polidoro, Sergio; Uguzzoni, FrancescoThe role of fundamental solution in potential and regularity theory for subelliptic PDE. Geometric methods in PDE's, 341–373, Springer INdAM Ser., 13, Springer, Cham, 2015. 35H20 (35A08 35A17 35B65 35K70 35R03 53C17)

Capogna, Luca; Citti, Giovanna; Manfredini, Maria Regularity of mean curvature flow of graphs on Lie groups free up to step 2. Nonlinear Anal. 126 (2015), 437–450.

Citti, Giovanna; Grafakos, Loukas; Pérez, Carlos; Sarti, Alessandro; Zhong, XiaoHarmonic and geometric analysis. Edited by Joan Mateu. Advanced Courses in Mathematics. CRM Barcelona. Birkhäuser/Springer Basel AG, Basel, 2015.

Citti, Giovanna; Sarti, Alessandro Models of the visual cortex in Lie groups.Harmonic and geometric analysis, 1–55, Adv. Courses Math. CRM Barcelona, Birkhäuser/Springer Basel AG, Basel, 2015.

Citti, Giovanna; Sarti, Alessandro A gauge field model of modal completion. J. Math. Imaging Vision 52 (2015), no. 2, 267–284. 94A08

Barbieri, D.; Citti, G. Reproducing kernel Hilbert spaces of CR functions for the Euclidean motion group. Anal. Appl. (Singap.) 13 (2015), no. 3, 331–346.

Sarti, Alessandro; Citti, Giovanna The constitution of visual perceptual units in the functional architecture of V1. J. Comput. Neurosci. 38 (2015), no. 2, 285–300. 92C20 (92B20)

Barbieri, D.; Citti, G.; Sarti, A. How uncertainty bounds the shape index of simple cells. J. Math. Neurosci. 4 (2014), Art. 5, 15 pp. 62P10 (92C37)

Avelin, Benny; Capogna, Luca; Citti, Giovanna; Nyström, Kaj Harnack estimates for degenerate parabolic equations modeled on the subelliptic p-Laplacian. Adv. Math. 257 (2014), 25–65.

Citti, Giovanna; Manfredini, Maria; Pinamonti, Andrea; Serra Cassano, Francesco Smooth approximation for intrinsic Lipschitz functions in the Heisenberg group. Calc. Var. Partial Differential Equations 49 (2014), no. 3-4, 1279–1308.

Capogna, Luca; Citti, Giovanna; Rea, Garrett A subelliptic analogue of Aronson-Serrin's Harnack inequality. Math. Ann. 357 (2013), no. 3, 1175–1198.

Capogna, Luca; Citti, Giovanna; Manfredini, Maria Uniform Gaussian bounds for subelliptic heat kernels and an application to the total variation flow of graphs over Carnot groups.Anal. Geom. Metr. Spaces 1 (2013), 255–275.

Capogna, Luca; Citti, Giovanna; Senni Guidotti Magnani, Cosimo Sub-Riemannian heat kernels and mean curvature flow of graphs. J. Funct. Anal. 264 (2013), no. 8, 1899–1928.

Citti, Giovanna; Senni, Cosimo Constant mean curvature graphs on exterior domains of the hyperbolic plane. Math. Z. 272 (2012), no. 1-2, 531–550.

Citti, Giovanna; Ferrari, Fausto A sharp regularity result of solutions of a transmission problem. Proc. Amer. Math. Soc. 140 (2012), no. 2, 615–620. 35J25 (35B65)

Barbieri, D.; Citti, G. Regularity of minimal intrinsic graphs in 3-dimensional sub-Riemannian structures of step 2. J. Math. Pures Appl. (9) 96 (2011), no. 3, 279–306.

Capogna, Luca; Citti, Giovanna; Manfredini, Maria Smoothness of Lipschitz minimal intrinsic graphs in Heisenberg groups Hn, n>1. J. Reine Angew. Math. 648 (2010), 75–110. (Reviewer: Po-Lam Yung) 35R03 (22E30 35A17 35B65 35D40 35J93)

Citti, Giovanna; Manfredini, Maria; Sarti, Alessandro Finite difference approximation of the Mumford and Shah functional in a contact manifold of the Heisenberg space.Commun. Pure Appl. Anal. 9 (2010), no. 4, 905–927.

Capogna, Luca; Citti, Giovanna; Manfredini, Maria Regularity of non-characteristic minimal graphs in the Heisenberg group H1. Indiana Univ. Math. J. 58 (2009), no. 5,2115–2160. (Reviewer: Davide Vittone) 58E12 (35B65 35J93 35R02 53C17)