Dr. Viviana Acquaviva

Professor of Physics, City University of New York
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Education

Ph.D. Degree in Astrophysics at SISSA/ISAS, Trieste, Italy (2006)
Thesis: "Weak lensing and cosmic acceleration"

B. Sc. and M. Sc. Degree in Physics at University of Pisa, Italy (2002)
Thesis: "Non-Gaussianity from inflation"

Current Appointments

Full Professor, Physics Department, CUNY NYC College of Technology (2021 - present).

Member of Doctoral Faculty, CUNY Graduate Center, Physics (2016 - present) and Earth and Environmental Sciences (2025 - present).

Visiting Scientist, Theoretical and Scientific Data Science Group, SISSA/ISAS, Trieste (2024 - present).

Research Interests

My research is at the intersection of AI, Physics, and Earth Science. I am pursuing three broad research directions: 1) How to evaluate and improve the forecasting skill of global climate models using ad-hoc metrics, predictive modeling, and generative tools; 2) How to reconstruct full spatio-temporal geophysical fields, in particular ocean carbon, from sparse and biased data, using statistics, machine learning, and AI tools; 3) How generative AI tools can be used responsibly to improve research workflow, and how principles of ethical AI can be translated into an actionable framework for scientists.

Scholarship Summary

$>$ 60 published papers in peer-reviewed journals or peer-reviewed conference proceedings. Two invited review articles for science outreach journals. $\sim$ 12,500 citations; h-index: 36 (source: Google Scholar).

Author, "Machine Learning for Physics and Astronomy", Princeton University Press (2023).

$>$ 80 invited seminars and lectures, $\sim$ 55 contributed talks/posters in conferences and workshops.

Select Recent Invited Presentations

"'Learning from Simulations using ML/AI tools", STAMPS (STAtistical Methods for the Physical Sciences Research Center), Carnegie Mellon University (2026).

"Statistical Tools for Representation Learning: A case study of ocean CO2", Scientific ML workshop, Oden Institute, the University of Texas at Austin (2025).

"From the cosmos to the climate", Keynote Lecture, "Learning the Deep Mysteries of The Universe with Cosmology" conference, Fiera di Primiero, Italy (2025).

"Interpretability tools for scientific ML", Invited Lecture, Astro/AI Workshop, Harvard University (2025).

"Learning from Simulations using ML/AI tools", John Vouros Distinguished Guest Speaker Colloquium, Rochester Institute of Technology (2025).

"Teaching Machine Learning for the Physical Sciences", Partnership for Integration of Computation in Undergraduate Physics, online (2024).

"Uncertainty Quantification: Conformal Predictions", European Astronomical Society Meeting, Padova (2024).

"Machine Learning for Science: A Journey from Astrophysics to Climate":

Plenary Talk, M^{2}LInES meeting (2024).

Colloquium, Yale Institute for Foundations of Data Science (2023).

"Machine Learning and Multiscale Phenomena", Invited Review, Simons Meeting for Multi-scale Physics (2023).

"Machine Learning with Pen and Paper", Astrophysics Colloquium, Center for Computational Astrophysics, Flatiron Institute (2023).

Teaching Experience Summary

Undergraduate course instructor: PHYS 3600, Machine Learning for Physics and Astronomy (2018-2025); PHYS 1117, Astronomy I (2012-2023); PHYS 1000, The Physical Universe (2016); PHYS 1112, General Physics II (2015); CUNY NYC College of Technology. Total Enrollment: 760; Average teaching evaluation: 4.8/5.0.

Graduate course instructor: PHYS 85200, Machine Learning for Scientists (2020, 2023, 2025); PHYS 85200, Large Language Models for Science (2026), CUNY Graduate Center. Total enrollment: 60.

Massive Open Online Courses: Developer and Lecturer, Machine Learning for Physics and Astronomy; Enrollment: $\sim$ 700 (2023-); Aprendizaje Automático para Física y Astronomía; Enrollment: $\sim$ 140 (2024-).

Select Awards and Honors

2026 CUNY Research and Sponsored Projects Award in Climate, Environment and Sustainability, for the project *From Sparse Data to Full Spatio-Temporal Fields: Surface Ocean Carbon and Beyond.*

2024 Chambliss Astronomical Writing Award from the American Astronomical Society for astronomy writing for an academic audience, specifically textbooks at either the upper-division undergraduate or graduate level, for *Machine Learning for Physics and Astronomy.*

Women Who Code's **Mentorship award** and **"100 Technologist to Watch" award** (2023).

"Tecnovisionarie" award for Italian Women in AI, AI x Astrophysics prize, by Women&Tech (2021).

Forbes "100 Italian Successful Women" (2021).

"50 women who did or are doing the history of Information Technology" by Wired Italy (2020).

Inspiring 50 Award, recognizing the 50 most influential Italian Women in Tech (2018).

Feliks Gross award for outstanding scholarship, CUNY Academy of Arts and Sciences (2017).

Select Recent Media Engagements

"Professor Receives $1.78M Simons Foundation Grant to Launch Climate Data Science Research Group", piece and interview by the CUNY Graduate Center (2025).

"The promises and perils of a mid-career pivot", Physics Today, career issue (2024).

"How one astrophysicist is tackling climate change", piece and interview by the CUNY Graduate Center (2024).

"Viviana Acquaviva and Charles Liu win American Astronomical Society awards for sharing the wonders of the Universe, piece and interview by the CUNY Graduate Center (2024).

"Viviana Acquaviva, from Astrophysics to Climate", Interview with the Italian Institute of Nuclear Physics media team (in Italian) (2022).

Recent Grant Awards

NSF Award, co-PI, Learning the Earth with AI and Physics STC Center, sub-award to CUNY, $250,000 (2026).

Simons Foundation PIVOT Research Award, PI, "From sparse data to full spatio-temporal fields: surface ocean carbon and beyond", $1,780,000 (2025).

NSF award, co-PI, "Collaborative Research: EPIIC: Accelerating sustainable partnerships for innovation, research, and entrepreneurship in AI (ASPIRE-AI)", $400,000 (2025).

NOAA award, co-PI, "Valuation of Surface Ocean pCO2 Observations For Machine Learning Applications", $573,955 (2024).

LEAP Research funding award, PI, "The Metrics Reloaded: Improved similarity assessment for climate maps", NSF, $290,000 (2024-2027).

PIVOT Fellowship award, Simons Foundation, PI, "From galaxy evolution to climate models: a data-driven journey", $280,000 (2023).

PSC-CUNY research award, PI, "Improved evaluation methods for global climate models", $6,000 (2024); "Yes, we can: Inferring galaxy properties from cosmological simulations using machine learning", $12,000 (2021); "Learning from simulations: a framework for domain adaptation techniques in Astrophysics", $6000 (2020).

NSF S-STEM award, co-PI, "Engaging, Empowering, and Retaining New Scholars in Science, Technology, Engineering and Mathematics,"$999,625 (2019-2024).

Select Professional Experience

Institutional Integration Director, Learning the Earth with AI and Physics STC center (2026-present).

Co-chair (2027) and **chair (2029)**, Gordon Research Conference series "Machine Learning for Actionable Climate Science" (2025-present).

External Advisory Board Member, NSF/Simons Artificial Intelligence Institute for Cosmic Origins (CosmicAI), (2024-present) and UniverseTBD collaboration (2026-present).

Member, Editorial Board, PRX Intelligence, American Physical Society (2026-present).

Member, Editorial Board, Machine Learning: Earth, IOP (2024-present).

Board Member, UniverseTBD collaboration (2025-present).

Member, AI Advisory Council to the Italian government (2023-2024). We developed a strategic plan for Artificial Intelligence activities and regulation in Italy, available here (in Italian).

Data Science Advisory Group (DSAG) member for NSFs National Optical-Infrared Astronomy Research Lab (NOIRLab) (2021-2023).

Grant Proposal Reviewer: Simons Foundation: Simons Collaborations; PIVOT fellowship program; Scientific Software Research Faculty Award; **Sloan Foundation**: Junior Faculty Research Awards in Science and Engineering; Matter-to-Life program; **National Science Foundation**: Institutes for Data-Intensive Research in Science and Engineering; Astrostatistics, Cosmology, and Extragalactic Astronomy panels. **Department of Energy**: Office of Science (SC) Funding For Accelerated, Inclusive Research (FAIR) program. **Deutsche Forschungsgemeinschaft (German Research Foundation)**, Ocean Sciences Program; **UK Science and Technology Facilities Council**: Astronomy Grant Panel. **NASA**: Hubble Fellowship Postdoctoral Program, Hubble Space Telescope annual Time Allocation Committee and science review panel, Postdoctoral Program. **CUNY Sponsored Programs:** Research in the Classroom, CUNY; Dissertation Award, CUNY Graduate Center; Faculty Development Grant, Borough of Manhattan Community College.

Referee for the journals: ''Nature Communications", ''Nature Climate and Atmospheric Sciences", ''Nature Review Physics", ''Nature Astronomy","Astronomy and Computing", ''The Astrophysical Journal", ''The Dark Universe", ''Monthly Notices of the Royal Astronomical Society", ''Journal of Cosmological Physics", and ''Astronomy and Astrophysics"; **Reviewer** for the NeurIPS workshop "Machine Learning for the Physical Sciences" and the ICML workshop "Machine Learning for Astrophysics".

Ph.D Committee member for **Carlos Ordaz**, CUNY (exp. 2026); **Dr. Joshua Fagin**, CUNY (2025); **Dr. Snigdaa Sethuram**, Georgia Tech (2025); **Dr. Regina Sarmiento**, Instituto de Astrofísica de Canarias (2023); **Dr. Shihua Zhao**, CUNY (2022); **Dr. Zoe Ansari**, University of Copenhagen (2022); **Dr. David Valcin**, University of Barcelona (2021); **Dr. Wouter Dobbels**, University of Ghent (2021); **Dr. Nicola Bellomo**, University of Barcelona (2020); **Dr. Karthik Iyer**, Rutgers University (2019).

Scientific Organizing Committee Member: 18th Vatican Observatory Summer School (co-Chair), Vatican Observatory, Castelgandolfo, Italy (June 2023); Meeting in a Meeting "Machine Learning in Astronomy: Methods, Applications, and Challenges", American Astronomical Society Meeting 238, online (June 2021); International Workshop "The Art of Measuring Physical Parameters in Galaxies", University of California Riverside, (2018); International School in Astronomy and Data Analysis "ADAIX" (Valencia, Spain, 2018); "SabinoFest" International Workshop, to celebrate the 60th birthday of Sabino Matarrese (Castiglioncello, Italy, 2015).

Select University Service Experience

Member, Executive Research Council, NYCCT (2021-present). We design and execute plans to increase research output at our college by exploring funding opportunities, developing partnerships, designing and running student research programs, and supporting faculty.

Member and Chair of 2022 Faculty Search, Department Appointment Committee (2018-present). We plan and execute faculty searches and evaluate re-appointment, tenure, and fellowship leave requests.

Member, Inaugural Technology Industry Committee, CUNY (2023-2025). We collaborate with industry members to improve AI-related career opportunities for CUNY students.

Member, CUNY Office of Research Faculty Advisory Council (2020-2023).

Program Director/Internship Director, Applied Computational Physics program, 2018-2019, 2021-2022 and 2025.

Faculty Liaison and Grants Outreach Coordinator, Office of Sponsored Program, NYCCT (2021-2023).

Member, Institute for the Theoretical Sciences of the CUNY Graduate Center Steering Committee member (2021-2023).

Member, Undergraduate Research Committee, NYCCT (2012-2022).

Member, General Education assessment committee, NYCCT (2014-2018).

Recent Mentoring

Research mentor for: **Dhruv Chakraborty**, Ph.D. student in Earth and Environmental Science, CUNY (2026-present); **Dr. Mohammad Amirianmatlob**, postdoctoral scientist, CUNY (2026-present); **Jina Yu**, Applied Math Masters student, Columbia University; **Davide Donno**, visiting Ph. D. student, University of Salento (2026-present); **Dr. Gabriele Accarino**, postdoctoral scientist, Columbia University (2024-present); **Dr Festa Buçinca**, CUNY, now Associate Director of Data Science at Regeneron; **Jake Postiglione**, Applied Computational Physics (ACP) graduate, now CUNY Ph.D. student (2021-present); **Olga Privman**, ACP graduate, school Valedictorian, CUNY Masters student; **Dr. Andy Lawler**, Ph. D. advisee and postdoctoral collaborator, Baylor University, 2017-2022; **Carlos Aguayza**, ACP intern, 2019; **Herschel Gordon**, ACP intern, 2019; **Andrea Zambrano**, ACP intern, 2019; **Justin Peterkin**, AstroCom scholar, now a Ph.D. student at the University of Maryland, 2019; **Dr. Christopher Lovell**, visiting Astronomy Ph.D. candidate, now a Dennis Sciama Fellow, 2017-2019; **George Nwanwko**, Emerging Scholar, CUNY, now a senior software engineer at Intuit, 2018-2019; **Faraz Chahili**, CUNY Masters student, now a Ph. D. student at University of Syracuse, 2017-2019; **Harpreet Gaur**, Microsoft Research Data Science Internship recipient, now Senior Program Manager at Meta, 2017-2019; **Hashir Qureshi**, Emerging Scholar and NASA Space Opportunity Grant recipient, CUNY, now a senior software engineer at Bluevine, 2017-2019.

Career mentor for: **Sarah Draves**, ACP student and AstroCom scholar; **Dr. Snigdaa Sethuram**, Ph.D. student at Georgia Tech, now a postdoc at Argonne National Lab; **Rosario Cecilio-Flores**, CUNY Master's student, now a Ph.D. student at Cornell U; **Hannah Stauss**, NYCCT Data Science major (2022-2023); **Nathanael Gutierrez**, CUNY Lehman College (2020-2022), now a Ph. D. student at Georgia Tech; **Sarah Medina**, AstroCom scholar and NASA grant recipient (2021-2022); **Dr. Ana Delgado**, CUNY/AstroCom scholar, Ph.D. from Harvard University, now an incoming CUNY faculty member (2018-2020).

Select Recent Community Building and Outreach Work

Panelist, Inaugural "AI4Progress" symposium, Italian Institute of Culture, New York (2026).

Panelist, "Future Faculty in the Physical Sciences" symposium, Princeton University (2026).

Panelist, "LEAP Summer Institute for elementary school teachers" (2025 and 2026); "Private and Public Sector Careers in Climate Data Science, Columbia University (2025); "Rising Stars in Physics Workshop", Columbia University and Flatiron Institute (2024).

Project Creator and Leader, "Astromaquinarios", development of Spanish-language Machine Learning materials together with students and postdocs from Latin America (2024).

Invited Speaker, "A space for your whole self: carving your academic path", European Astronomical Society meeting, Padova (2024); "Community building/ Finding your network", workshop for early career Astronomers, Center for Astrophysics, Harvard University (2022); European Astronomical Society meeting, Valencia (2022); "Navigating Science and Motherhood", Astronomoms network online group meeting (2022).

Co-I and Mentor, "AstroComNYC: A Partnership between New York City Astronomers", mentoring program for undergraduate students funded by the NSF (2012-2024).

Organizer, "Career in the Sciences: An Interactive Panel" for undergraduate CUNY students, Flatiron Institute (2021); "How to support early career researchers" round table, Center for Computational Astrophysics of the Flatiron Institute (2021).

List of publications (see also Google Scholar)

Books:

V. Acquaviva, Machine Learning for Physics and Astronomy (2023). Princeton University Press.

Journal articles and refereed conference articles under review:

V. Acquaviva, R. Wild, A. Laio, A. Fay, T. Heimdal and G. McKinley, "How well is surface ocean carbon represented in observations and ocean models?" (2026). Submitted to AGU Advances.

G. Accarino, M. Amirian, A. Fay, T. Heimdal, G. McKinley, and **V. Acquaviva**, "Learning Calibrated and Samplable Predictive Distributions of Surface-Ocean ΔpCO2 Using Tabular Diffusion Models" (2026). Submitted to the workshop "Representations for the Physical Sciences", Advances in Neural Information Processing Systems.

G. Accarino, J. Nathaniel, C. Roesch, P. Gentine, S. Shamekh, D. Watson-Parris, and **V. Acquaviva**, "Wavelet Flow Matching for Multi-Scale Physics Emulation" (2026). Submitted to Advances in Neural Information Processing Systems.

S. Shamekh and **V. Acquaviva**, "Linking Dynamical Time Scales and Experimental Design to Parameter Identifiability from Time-Series Observations" (2026). Submitted to Physical Review E.

G. Accarino, **V. Acquaviva**, S. Shamekh, D. Watson-Parris, and D. Lawrence, "WaveSim: A Wavelet-based Multi-scale Similarity Metric for Weather and Climate Fields" (2026). arXiv preprint: `https://arxiv.org/abs/2512.14656`. Submitted to Journal of Advances in Modeling Earth Systems (JAMES).

T. H. Heimdal, G. A. McKinley, A. P. Shaum, **V. Acquaviva**, A. R. Fay, and A. J. Sutton, "Quantifying errors in ocean carbon reconstructions in the context of marine carbon dioxide removal (mCDR)"(2025). arXiv preprint: `https://essopenarchive.org/doi/full/10.22541/essoar.175434006.69051349`. Submitted to Earth's Future.

Refereed journal articles or conference proceedings:

T. H.Heimdal, A. R. Fay, A. P. Shaum, **V. Acquaviva**, V. Bennington, et al. "An update of the LDEO fCO2-Residual method: algorithmic choices improve ocean carbon sink estimates" (2025). arXiv preprint: `https://eartharxiv.org/repository/view/11157/`. Machine Learning: Earth 2 (2), 025005.

A. R. Fay, T. H. Heimdal, **V. Acquaviva**, A. P. Shaum, and G. A. McKinley, "Sensitivity of ocean carbon sink estimates to rare observations" (2025). Geophysical Research Letters, 52(19), p.e2025GL117961.

F. Buçinca-Cupallari, A. H. Maller, **V. Acquaviva**, A. Gabrielpillai, et al., "Can we discover physical models using machine learning? A case study of galaxy sizes"(2025). The Astrophysical Journal, 987(2), p.165.

T. Heimdal, A. Shaum, **V. Acquaviva**, A. Fay, D. Samant, J. Busecke, and G. A. McKinley, "Targeting bias in algorithm optimization improves reconstructions of surface ocean pCO2" (2025). Machine Learning: Earth, 1, p.015003.

V. Acquaviva, E. A. Barnes, D. J. Gagne II, G. A. McKinley, and S. Thais, "Ethics in climate AI: From theory to practice" (2024). PLOS Climate, 3(8), p.e0000465.

S. S. Sethuram, R. K. Cochrane, C. C. Hayward, **V. Acquaviva**, et al., "Emulating radiative transfer with artificial neural networks" (2023). Monthly Notices of the Royal Astronomical Society, 526(3), pp.45204528.

C. Pacifici, K. G. Iyer, B. Mobasher, E. da Cunha, **V. Acquaviva**, D. Burgarella, et al., "The art of measuring physical parameters in galaxies: A critical assessment of spectral energy distribution fitting techniques" (2023). The Astrophysical Journal, 944(2), p.141.

A. P. McCarron, S. L. Finkelstein, O. A. C. Ortiz, D. Davis, E. M. Cooper, I. Jung, et al. including **V. Acquaviva**, "Stellar populations of Ly?-emitting galaxies in the HETDEX Survey. I. An analysis of LAEs in the GOODS-N field" (2022). The Astrophysical Journal, 936(2), p.131.

B. W. Holwerda et al., including **V. Acquaviva**, "Galaxy and mass assembly (GAMA): Self-organizing map application on nearby galaxies." Monthly Notices of the Royal Astronomical Society (2022).

K. Gebhardt, E.M. Cooper, R. Ciardullo, **V. Acquaviva**, et al., "The HobbyEberly Telescope Dark Energy Experiment (HETDEX) Survey Design, Reductions, and Detections." The Astrophysical Journal, Volume 923 (2021).

Y. Zhang, et al., including **V. Acquaviva**, "First HETDEX Spectroscopic Determinations of Ly? and UV Luminosity Functions at z= 23: Bridging a Gap between Faint AGNs and Bright Galaxies." The Astrophysical Journal, Volume 922 (2021).

V. Acquaviva, "Teaching Machine Learning for the Physical Sciences: A summary of lessons learned and challenges." Proceedings of the Second Teaching Machine Learning and Artificial Intelligence Workshop. Proceedings of Machine Learning Research (2022).

A. Lawler and **V. Acquaviva**, "Detecting episodes of star formation using Bayesian model selection." Monthly Notices of the Royal Astronomical Society, Volume 502 (2021).

V. Acquaviva, C. Lovell, and E. Ishida, "Debunking Generalization Error or: How I Learned to Stop Worrying and Love My Training Set." Proceedings of the Workshop "ML x Physical Sciences" at the 34th Conference on Neural Information Processing Systems (NeurIPS), arXiv:2012.00066 (2020).

S. Sherman et al., including **V. Acquaviva**, "Exploring the high-mass end of the stellar mass function of star-forming galaxies at cosmic noon. Monthly Notices of the Royal Astronomical Society, Volume 491 (2020).

C. Lovell, **V. Acquaviva**, P. Thomas, K. Iyer, E. Gawiser, and S. Wilkins, "Learning the Relationship between Galaxies Spectra and their Star Formation Histories using Convolutional Neural Networks and Cosmological Simulations." Monthly Notices of the Royal Astronomical Society, Volume 490 (2019).

V. Acquaviva, "How can machine learning help measure the physical properties of galaxies?"; Invited Review, "The art of measuring galaxy physical parameters" (2019).

V. Acquaviva, Pushing the Technical Frontier: From Overwhelmingly Large Data Sets to Machine Learning." Invited Review, Proceedings of the International Astronomical Union, IAU Symposium, Volume 341, arXiv:1901.05978 (2019).

J. J. Fang, et al., including **V. Acquaviva** "Demographics of Star-forming Galaxies since z? 2.5. I. The UVJ Diagram in CANDELS. The Astrophysical Journal, Volume 858 (2018).

B. Lee, M. Giavalisco, K. Whitaker, C. Williams, H. Ferguson, **V. Acquaviva**, et al, "The Intrinsic Characteristics of Galaxies on the SFR-M* Plane at $1.2 < z < 4$: I. The Correlation between Stellar Age, Central Density, and Position Relative to the Main Sequence." The Astrophysical Journal, Volume 853 (2018).

A. Leung, **V. Acquaviva**, E. Gawiser, R. Ciardullo, E. Komatsu, et al, "Bayesian Redshift Classification of Emission-line Galaxies with Photometric Equivalent Widths." The Astrophysical Journal, Volume 843 (2017).

P. Kurczynski, E. Gawiser, **V. Acquaviva**, E. Bell, A. Dekel, et al, "Evolution of intrinsic scatter in the SFR-stellar mass correlation at $0.5 < z < 3$." The Astrophysical Journal Letters, Volume 820 (2016).

V. Acquaviva, "How to measure metallicity from five-band photometry with supervised machine learning algorithms." Monthly Notices of the Royal Astronomical Society, Volume 456 (2016).

B. Mobasher, T. Dahlen, H. Ferguson, **V. Acquaviva**, G. Barro, et al, "A Critical Assessment of Stellar Mass Measurement Methods." The Astrophysical Journal, The Astrophysical Journal, Volume 808 (2015).

V. Acquaviva, A Raichoor and E. Gawiser, "Simultaneous Estimation of Photometric Redshifts and SED Parameters: Improved Techniques and a Realistic Error Budget", The Astrophysical Journal, Volume 804 (2015).

J. Bridge et al., including **V. Acquaviva**, "Physical and morphological properties of [O ii] emitting galaxies in the HETDEX pilot Survey.", The Astrophysical Journal, Volume 799 (2015).

P. Kurczynski, E. Gawiser, M. Rafelski, H. Teplitz, **V. Acquaviva**, et al, "The UV Continuum of z ¿ 1 Star-forming Galaxies in the Hubble Ultraviolet UltraDeep Field," Astrophysical Journal Letters 793, L5 (2014).

A. Satyanarayana and **V. Acquaviva**, Enhanced Cobweb Clustering for Identifying Analog Galaxies in Astrophysics, Proceedings of the IEEE Canadian Conference on Electrical and Computer Engineering (2014).

V. Acquaviva, M. Martin, E. Gawiser and A. Leung, "Low/High Redshift Classification of Emission Line Galaxies in the HETDEX survey," Statistical Challenges in 21st Century Cosmology, Proceedings of the International Astronomical Union, IAU Symposium, Volume 306, p. 365 (2014).

A. Hagen, R. Ciardullo, C. Gronwall, **V. Acquaviva**, et al, "Spectral Energy Distribution Fitting of HETDEX Pilot Survey Lya Emitters in COSMOS and GOODS-N", The Astrophysical Journal, Volume 786 (2014).

The CANDELS collaboration (T. Wiklind et al, including **V. Acquaviva**), "Properties of Submillimeter Galaxies in the CANDELS GOODS-South Field", The Astrophysical Journal, Volume 785 (2014).

C. Vargas, H. Bish,**V. Acquaviva**, et al, "To Stack or Not to Stack: Spectral Energy Distribution Properties of Lya-Emitting Galaxies at z=2.1", The Astrophysical Journal, Volume 783 (2014).

The ACT Collaboration (J. Sievers et al., including **V. Acquaviva**), "The Atacama Cosmology Telescope: Cosmological parameters from three seasons of data.", Journal of Cosmology and Astroparticle Phys. 10 (2013).

J. Feldmeier et al. including **V. Acquaviva**, "Searching for Neutral Hydrogen Halos around $z \sim 2.1$ and $z \sim 3.1$

Ly-alpha Emitting Galaxies," The Astrophysical Journal, Volume 776 (2013).

The CANDELS collaboration (T. Dahlen et al including **V. Acquaviva**), "A critical assessment of photometric redshifts methods: a CANDELS investigation.", The Astrophysical Journal 773 (2013).

The ACT Collaboration (R. Dunner, M. Hasselfield, T. Marriage, J. Sievers, **V. Acquaviva**, et al.) "The Atacama Cosmology Telescope: Data Characterization and Map Making.", The Astrophysical Journal 762 (2013).

V. Acquaviva, C. Vargas, E. Gawiser and L. Guaita, "The Curious Case of Lyman Al-pha Emitters: Growing Younger from z $\sim$ 3 to z $\sim$ 2?", Astrophysical Journal Lett. 751 (2012).

V. Acquaviva, E. Gawiser, S. J. Bickerton, N. Grogin, Y. Guo and S-K. Lee, Survey design for Spectral Energy Distribution fitting: A Fisher Matrix approach", The Astrophysical Journal, Volume 748 (2012).

The CANDELS Collaboration (A. M. Koekemoer, et al, including **V. Acquaviva**) "CANDELS: The Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey - The Hubble Space Telescope Observations, Imaging Data Products and Mosaics", Astrophys. Journal Suppl. 197 (2011).

The CANDELS Collaboration (N. A. Grogin, et al., including **V. Acquaviva**) CANDELS: The Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey", Astrophys. Journal Suppl. 197 (2011).

The ACT Collaboration (A. Hajian, **V. Acquaviva**, et al.) "The Atacama Cosmology Telescope: Calibration with WMAP Using Cross- Correlations.", Astrophys. Journal 740 (2011).

The ACT Collaboration (J. Dunkley. R. Hlozek, J. Sievers, **V. Acquaviva**, et al.) "The Atacama Cosmology Telescope: Cosmological Parameters from the 2008 Power Spectra.", The Astrophysical Journal, Volume 739 (2011).

V. Acquaviva, E. Gawiser and L. Guaita, "SED fitting with MCMC: methodology and application to large galaxy surveys", proceedings of the IAU Symposium 284 The Spectral Energy Distribution of Galaxies", Popescu, C. & Tufts, R. Eds., Preston, UK (2011).

V. Acquaviva, E. Gawiser, and L. Guaita, "SED fitting with Markov Chain Monte Carlo: Methodology and Application to z=3.1 Ly?-Emitting Galaxies." The Astrophysical Journal, Volume 737 (2011).

The ACT Collaboration (T. Marriage, et al., including **V. Acquaviva**) "The Atacama Cosmology Telescope: Sunyaev Zeldovich Selected Galaxy Clusters at 148 GHz in the 2008 Survey." Astrophys. Journal 737 (2011).

L. Guaita, **V. Acquaviva**, N. Padilla, E. Gawiser, et al., "Ly-αEmitting Galaxies at z = 2.1: Stellar Masses, Dust and Star Formation Histories from Spectral Energy Distribution Fitting", Astrophys. Journal 733 (2011).

The ACT Collaboration (N. Sehgal, et al., including **V. Acquaviva**) "The Atacama Cosmology Telescope: Cosmology from Galaxy Clusters Detected via the Sunyaev- Zeldovich Effect." Astrophys. Journal 732 (2011).

The ACT Collaboration (A. Hincks, et al., including **V. Acquaviva**) The Atacama Cosmology Telescope (ACT): Beam Profiles and First SZ Cluster Maps", Astrophys. Journal Supp. 191 (2011).

V. Acquaviva and E. Gawiser, "How to Falsify the GR+ΛCDM model with Galaxy Redshift Surveys", Phys Rev. D 82 (2010).

The ACT Collaboration (F. Menanteau, et al., including **V. Acquaviva**), "The Atacama Cosmology Telescope: Physical Properties and Purity of a Galaxy Cluster Sample Selected via the Sunyaev-Zeldovich Effect.", Astrophys. Journal 723 (2010).

The ACT Collaboration (J. Fowler, **V. Acquaviva**, et al.), "The Atacama Cosmology Telescope: A Measurement of the 600 $<$ l $<$ 8000 Cosmic Microwave Background Power Spectrum at 148 GHz", Astrophys. Journal 722 (2010).

V. Acquaviva, A. Hajian, D. N. Spergel and S. Das, "Next Generation Redshift Surveys and the Origin of Cosmic Acceleration", Phys. Rev. D 78 (2008). **V. Acquaviva** and L. Verde, "Observational Signatures of Jordan-Brans-Dicke Theories of Gravity", JCAP 0712:001 (2007).

C. Baccigalupi and **V. Acquaviva**, The CMB as a Dark Energy Probe", proceedings of the International Conference on CMB and Physics of the Early Universe", Ischia (2006).

V. Acquaviva and C.Baccigalupi, Dark Energy Records in Lensed Cosmic Microwave Background", Phys. Rev. D 74 (2006).

V. Acquaviva, C. Baccigalupi, S.M. Leach, A.R. Liddle and F. Perrotta, "Structure Formation Constraints on the Jordan-Brans-Dicke theory", Phys. Rev. D 71 (2005).

V. Acquaviva, C. Baccigalupi and F. Perrotta, "Weak Lensing in Generalized Gravity Theories", Phys. Rev. D 70 (2004).

V. Acquaviva, C. Baccigalupi and F. Perrotta, "Weak Lensing and Gravity Theories", proceedings of the IAU Symposium 225 Impact of Gravitational Lensing on Cosmology", Mellier Y. & Meylan G. Eds., Lausanne, (2004).

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