

Curriculum Vitae

Gabriele U. Varieschi

Department of Physics
Loyola Marymount University
110 Seaver Hall – 1 LMU Drive – MS 8227
Los Angeles, CA 90045-2659
Voice: (310) 338-7632 - Fax: (310) 338-5816
E-mail: gvarieschi@lmu.edu
Web-site: <https://gvarieschi.lmu.build>

EDUCATION

- **Ph.D.** in Physics, [University of California, Los Angeles](#), June 2000. Department of Physics.
Title of dissertation: “**Perturbative Quantum Chromodynamics Predictions for Very High Energy Atmospheric Neutrinos and Muons**,” (2000), [UCLA, Ph. D. dissertation](#).
Committee members: Prof. G.B. Gelmini (Chair and Advisor), Prof. Z. Bern, Prof. D.A. Giesecker, Prof. R. Peccei (UCLA, Vice Chancellor of Research).
- **M.S.** in Physics, [University of California, Los Angeles](#), March 1996. Department of Physics.
- **Laurea in Fisica**, [Università degli Studi di Milano, Italy](#), March 1989 (110/110, “Con Lode”).
Department of Physics.
Title of dissertation: “**Studies and Measures on the Stability and Quench Propagation in High Field Super-Conducting Magnets**,” (1987-1989), Università di Milano, Laurea dissertation.
Committee members: Prof. E. Acerbi (Chair and Advisor), Prof. L. Rossi (Co-Advisor, CERN, Geneva).

CURRENT ACADEMIC EMPLOYMENT

Professor of Physics, [Loyola Marymount University](#) Aug. 2012-present

PRIOR ACADEMIC EMPLOYMENT

Department Chair , Dept. of Physics, Loyola Marymount University	May 2022-May2025
Acting Chair , Dept. of Physics, Loyola Marymount University	Spring 2018
Acting Chair , Dept. of Physics, Loyola Marymount University	Spring 2012
Associate Professor of Physics , Loyola Marymount University (tenured in August 2006)	2006-2012
Department Chair , Dept. of Physics, Loyola Marymount University	2007-2008
Assistant Professor of Physics , Loyola Marymount University	2000-2006
Research Assistant , Dept. of Physics and Astronomy, UCLA	1997-2000
Teaching Assistant , Dept. of Physics and Astronomy, UCLA	1994-1998
Physics and Math Instructor , Liceo “Leone XIII”, Milano, Italy (Jesuit High School)	1991-1994
Research Associate , Dept. of Physics, University of Milano and I.N.F.N	1987-1989

PROFESSIONAL EXPERIENCE

Computer Methodologies International Coordinator, [Pirelli Tire Company, Italy](#) 1989-1991

TEACHING/ADVISING

COURSES TAUGHT AT LMU (Fall–F or Spring–S semester):

- Physics 101/1100 - *Introduction to Mechanics*: S2001, S2002, S2003, S2005, S2006, S2007, S2010, S2011, S2015, S2016, S2017, S2021, S2022, S2023, and S2024.
- Physics 101/1100 lab - *Introduction to Mechanics Laboratory*: S2001, S2002, S2003, S2005, S2006, S2007, S2008, S2010, S2011, S2015, S2016, S2017, S2018, S2021, S2022, S2023, S2024, and S2025.
- Physics 201/2100 - *Introduction to Electricity and Magnetism*: F2000, F2002, F2005, F2009, F2010, F2011, F2014, F2015, F2018, F2022, and F2024.

- Physics 201/2100 lab - *Introduction to Electricity and Magnetism Laboratory*: F2000, F2002, F2005, F2007, F2009, F2010, F2011, F2014, F2015, F2018, F2019, F2022, and F2024.
- Physics 212 - *Intermediate Mechanics*: S2001, S2002, and S2010.
- Physics 253/2500 - *General Physics I*: F2001, F2003, F2004, F2008, F2012, S2013, F2017, F2021, and F2025.
- Physics 253/2500 lab - *General Physics I Laboratory*: F2002, F2003, F2004, F2008, F2009, S2012, F2012, S2013, F2017, F2021, F2024, and F2025.
- Physics 254 - *General Physics II*: S2009, and F2016.
- Physics 254/2550 lab - *General Physics II Laboratory*: S2009, F2016, and S2026.
- Physics 2600 – *Foundations of Modern Physics*: S2025 and S2026.
- Physics 298 - *Research in Physics*: F2008, S2009, F2010, S2011, F2011, and S2012.
- Physics 301 - *Electromagnetic Fields*: F2004, F2005, F2007, F2008, F2014, and F2018.
- Physics 302 - *Electromagnetic Waves*: S2005, S2006, S2008, S2009, S2015, and S2019.
- Physics 3100 - *Electrodynamics*: F2023.
- Physics 321 - *Quantum Physics I*: F2011, F2015, and F2017.
- Physics 322 - *Quantum Physics II*: S2012, S2016, and S2018.
- Physics 398 - *Research in Physics*: F2009, S2010, F2012, S2013, F2014, and S2015.
- Physics 461 - *Elementary Particles*: F2001, and S2011 (new LMU course developed).
- Physics 471 - *Introduction to Relativity and Cosmology*: F2010 (new LMU course developed).
- Physics 490 - *Physics Teaching*: every semester.
- Physics 498 – *Research in Gravitational Physics*: F2003, F2005, F2007, F2015, S2016, SF2017, SF2018, SF2019, SF2021, and SF2022.

TEACHING INTERESTS:

- Fundamental Physics courses with emphasis on problem solving, conceptual aspects and use of active learning techniques and tools.
- Advanced undergraduate courses in Theoretical Physics, Particle Physics, Gravitation and Cosmology.

LMU STUDENTS ADVISED:

- Advised 32 LMU undergraduate students (22 physics majors, 10 engineering physics/applied physics majors) between Spring 2007 and Fall 2026.
- Prior to Spring 2007: informal advising only to physics and engineering physics students (formal advising to all students was done by Dept. Chair).

LMU PHYSICS STUDENTS SUPERVISED (RESEARCH ASSISTANTS - SENIOR THESIS):

- Mr. Isaiah Tyler – gravitational physics research (HHMI STEM RLC student). 2024-2026
- Mr. Shane Murray – gravitational physics research and thesis. 2021-2022
- Mr. Kyle Schoener – gravitational physics research and thesis. 2020-2021
- Mr. Matthew Guhl – mathematical physics thesis. 2019-2020
- Mr. Yuanji Huang – mathematical physics thesis. 2018-2019
- Mr. Kabir Buxani – particle physics thesis. 2017-2018
- Mr. Daniel Dijamco – gravitational physics thesis. 2017-2018
- Ms. Kellie Ault – gravitational physics research and thesis. 2014-2016
- Ms. Zily Burstein –musical acoustics and gravitational physics research/thesis. 2010-2014
- Ms. Christina Gower –musical acoustics research. 2007-2010
- Ms. Isabel Jully – astro-particle and classical physics research. 2003-2005
- Ms. Kaoru Kamiya – astro-particle and classical physics research. 2002-2003
- Mr. Danny Harrington – cosmic ray research. 2000-2001

SCHOLARSHIP

PUBLISHED PEER REVIEWED PAPERS OR DISSEMINATED WORK:

- G. U. Varieschi, “**Fractional-Dimension Gravity and the Milky Way galaxy**,” Submitted to: Intl. J. Mod. Phys. D, e-Print: [2607.01412](#) [astro-ph.GA].
- G. U. Varieschi, “**Newtonian Fractional-Dimension Gravity and the mass-dimension field equation**,” Published in: [Universe 11, no. 12: 388 \(2025\)](#), e-Print: [2507.20012](#) [gr-qc].
- G. U. Varieschi, “**Newtonian Fractional-Dimension Gravity and Galaxies without Dark Matter**,” Published in: [Universe 9 \(2023\) 6, 246](#), [Universe 9 \(2023\) 246](#), e-Print: [2212.09932](#) [gr-qc].
- G. U. Varieschi, “**Newtonian Fractional-Dimension Gravity and the External Field Effect**,” Published in: [Eur. Phys. J. Plus 137](#) (2022) 11, 1217, e-Print: [2205.08254](#) [gr-qc].
- G. Calcagni and G. U. Varieschi, “**Gravitational potential and galaxy rotation curves in multi-fractional spacetimes**,” Published in: [JHEP 08](#) (2022) 024, e-Print: [2112.13103](#) [gr-qc].
- G. U. Varieschi, “**Relativistic Fractional-Dimension Gravity**,” [Universe 2021, 7\(10\), 387, 387](#); e-Print: [2109.02855](#) [gr-qc].
- G. U. Varieschi, “**Newtonian Fractional-Dimension Gravity and Rotationally Supported Galaxies**,” Published in: [Mon. Not. Roy. Astron. Soc. 503](#) (2021) 2, 1915-1931, e-Print: [2011.04911](#) [gr-qc].
- G. U. Varieschi, “**Newtonian Fractional-Dimension Gravity and Disk Galaxies**,” [Eur. Phys. J. Plus 136](#) (2021) 2, 183, e-Print: [2008.04737](#) [gr-qc].
- G. U. Varieschi, “**Newtonian Fractional-Dimension Gravity and MOND**,” [Found. Phys. 50](#) (2020) 11, 1608-1644, e-Print: [2003.05784](#) [gr-qc].
- G. U. Varieschi, “**Newtonian Fractional-Dimension Gravity (NFDG) Webpage**,” <https://gvarieschi.lmu.build/NFDG2020.html> (2020 - present).
- G. U. Varieschi, “**Applications of Fractional Calculus to Newtonian Mechanics**,” [Journal of Applied Mathematics and Physics](#), 6, 1247-1257 (2018), preprint: [arXiv:1712.03473](#) [physics.class-ph].
- J. Mureika and G. Varieschi, “**Black hole shadows in fourth-order conformal Weyl gravity**,” Can. J. Phys., <https://cdnsiencepub.com/doi/10.1139/cjp-2017-0241>, June 2017, preprint: [arXiv:1611.00399](#) [gr-qc].
- G. Varieschi and K. Ault (+), “**Wormhole geometries in fourth-order conformal Weyl gravity**,” Int. J. Mod. Phys. D, DOI: [10.1142/S0218271816500644](#), Apr. 2016, preprint: [arXiv:1510.05054](#) [gr-qc]. (+) LMU student co-author.
- G. U. Varieschi, “**Astrophysical Tests of Kinematical Conformal Cosmology in Fourth-Order Conformal Weyl Gravity**,” [Galaxies](#), 2 (2014) 4, 577-600, December 2014, DOI: [10.3390/galaxies2040577](#) (preprint: [arXiv:1410.2944](#) [astro-ph.CO]).
- G. U. Varieschi, “**Kerr metric, geodesic motion, and Flyby Anomaly in fourth-order Conformal Gravity**,” [Gen. Relativ. Gravit.](#), 46, 1741, June 2014, DOI: [10.1007/s10714-014-1741-z](#) (preprint: [arXiv:1401.6503](#) [gr-qc]).
- G. Varieschi and Z. Burstein (+), “**Conformal Gravity and the Alcubierre Warp Drive Metric**,” [ISRN Astronomy and Astrophysics](#), vol. 2013, Article ID 482734, Jan. 2013, preprint: [arXiv:1208.3706](#) [gr-qc]. (+) LMU student co-author.

Z. Burstein (+), C. Gower (+) and G. Varieschi, “**Simulating a guitar with a conventional sonometer,**” [*Open Journal of Acoustics*](#), Vol. 2 N. 2, June 2012 (preprint: [arXiv:1105.4570](#) [physics.class-ph]). (+)
LMU student co-author.

G. Varieschi, “**Conformal cosmology and the Pioneer Anomaly,**” [*Phys. Res. Int.* 2012:469095](#), 2012.
(arXiv preprint: [arXiv:1010.3262](#) [astro-ph.CO]).

G. Varieschi, “**Kinematical conformal cosmology: fundamental parameters from astrophysical observations,**” *ISRN Astronomy and Astrophysics*, vol. 2011, Article ID 806549, May 2011,
<https://www.hindawi.com/journals/isrn/2011/806549/> (arXiv preprint: [arXiv:0812.2472](#) [astro-ph]).

G. Varieschi (*) and C. Gower (+), “**Intonation and compensation of fretted string instruments,**”
[*Am. J. Phys.* 78 \(1\), 47-55](#), January 2010 (arXiv preprint: [arXiv:0906.0127](#) [physics.class-ph]).
(*) First author of paper; (+) LMU student co-author.

G. Varieschi, “**A kinematical approach to conformal cosmology,**” *Gen. Relativ. Gravit.*, **42** (4), 929-974, April 2010, <https://link.springer.com/article/10.1007%2Fs10714-009-0890-y> (arXiv preprint: [arXiv:0809.4729](#) [gr-qc]).

G. Varieschi, “**Eight and a half minutes,**” *Physics Education*, Vol. 43 (1), 68-74,
<https://iopscience.iop.org/article/10.1088/0031-9120/43/01/007>, January 2008 (arXiv preprint: [physics/0612074](#)).

G. Varieschi, “**The projectile inside the loop,**” [*Physics Education*, Vol. 41 \(3\), 236-239](#), May 2006
(arXiv preprint: [physics/0506032](#)).

G. Varieschi (*) and I. Jolly (+), “**Toy blocks and rotational physics,**” [*The Physics Teacher*, Vol. 43 \(6\), 360-362](#), September 2005 (arXiv preprint: [physics/0402119](#)).
(*) First author of paper; (+) LMU student co-author.

G. Gelmini, G. Varieschi and T. Weiler, “**Bounds on relic neutrino masses in the Z-burst model,**”
[*Phys. Rev. D* 70, 113005](#), 2004 (arXiv preprint: [hep-ph/0404272](#)). (Authors in alphabetical order)

G. Varieschi (*) and K. Kamiya (+), “**Toy models for the falling chimney,**” [*Am. J. Phys.* 71 \(10\), 1025-1031](#), October 2003 (arXiv preprint: [physics/0210033](#)).
(*) First author of paper; (+) LMU student co-author.

G. Gelmini, P. Gondolo and G. Varieschi, “**Measuring the prompt atmospheric neutrino flux with down-going muons in neutrino telescopes,**” [*Phys. Rev. D* 67, 017301](#), 2003 (arXiv preprint: [hep-ph/0209111](#)). (Authors in alphabetical order)

G. Gelmini and G. Varieschi, “**Cosmic rays above the ankle from Z bursts with 0.07-eV relic neutrinos,**” 2002 (arXiv preprint: [hep-ph/0201273](#)). (Authors in alphabetical order)

G. Gelmini, P. Gondolo and G. Varieschi, “**Measurement of the gluon partonic distribution function at small x with neutrino telescopes,**” [*Phys. Rev. D* 63, 036006](#), 2001 (arXiv preprint: [hep-ph/0003307](#)).
(Authors in alphabetical order)

G. Gelmini, P. Gondolo and G. Varieschi, “**Prompt atmospheric neutrinos and muons: dependence on the gluon distribution function,**” [*Phys. Rev. D* 61, 056011](#), 2000 (arXiv preprint: [hep-ph/9905377](#)).
(Authors in alphabetical order)

G. Gelmini, P. Gondolo and G. Varieschi, “**Prompt atmospheric neutrinos and muons: NLO vs LO QCD predictions,**” [*Phys. Rev. D* 61, 036005](#), 2000 (arXiv preprint: [hep-ph/9904457](#)).
(Authors in alphabetical order)

GRANTS AWARDED IN SUPPORT OF RESEARCH:

• Seaver College Faculty Fellowship, LMU	Spring 2019
• Faculty Summer Research Grant, LMU	2017
• Faculty Summer Research Grant, LMU	2015
• Faculty Summer Research Grant, LMU	2012
• Faculty Summer Research Grant, LMU	2010
• Faculty Summer Research Grant, LMU	2008
• Faculty Summer Research Grant, LMU	2004
• Cottrell College Science Award, Research Corporation, Tucson, AZ	2002-2004
• New Faculty Summer Research Grant, LMU	2001

WORK IN PROGRESS:

G. U. Varieschi, “**Fractional-Dimension Gravity and Relativity**,” 2026-27, in progress.

PRESENTATIONS

G. U. Varieschi, “[Newtonian Fractional-Dimension Gravity and the Mass-Dimension Field Equation](#),” presented at the APS (American Physical Society) Global Physics Summit, Denver, Colorado, 2026.

G. U. Varieschi, “[Newtonian Fractional-Dimension Gravity and Dark Matter](#),” presented at the APS (American Physical Society) April Meeting, Sacramento, California, 2024.

G. U. Varieschi, “[Newtonian Fractional-Dimension Gravity and Dark Matter](#),” presented at the Faculty Pub Night – LMU William H. Hannon Library, February 20, 2024.

G. U. Varieschi, “[Newtonian Fractional-Dimension Gravity and Galactic Dynamics](#),” presented at the APS (American Physical Society) April Meeting (online meeting), 2021.

G. U. Varieschi, “**Applications of Fractional Calculus to Newtonian Mechanics**,” presented at the APS (American Physical Society) April Meeting, Columbus, Ohio, 2018.

G. Varieschi and K. Ault, “**Wormhole geometries in fourth-order conformal Weyl gravity**,” presented at the APS (American Physical Society) April Meeting, Salt Lake City, Utah, 2016.

G. Varieschi and Z. Burstein, “**Conformal Gravity and the Alcubierre Warp Drive Metric**,” presented at the APS (American Physical Society) April Meeting, Denver, Colorado, 2013.

G. Varieschi and C. Gower, “**Intonation and compensation of fretted string instruments**,” presented at the APS (American Physical Society) April Meeting, Anaheim, California, 2011.

G. Varieschi, “**A kinematical approach to conformal cosmology**,” presented at the APS (American Physical Society) April Meeting, Denver, Colorado, 2009.

G. Varieschi, “**Eight and a half minutes**,” presented at the APS (American Physical Society) April Meeting, St. Louis, Missouri, 2008.

G. Varieschi, “**Bounds on relic neutrino masses in the Z-bursts model**,” presented at the APS (American Physical Society) April Meeting, Denver, Colorado, 2004.

G. Varieschi, “**Toy models for the falling chimney**,” presented at the 128th AAPT (American Association of Physics Teachers) National Meeting, Miami Beach, Florida, 2004.

UNIVERSITY/PROFESSIONAL/COMMUNITY SERVICE

LOYOLA MARYMOUNT UNIVERSITY:

- University Library Committee 2020-2022
- University Student Affairs Committee 2017-2020
- University Library Committee 2009-2012
- Undergraduate Library Research Award committee 2013
- University Student Affairs Committee 2005-2007
- University Special Committee on Math and Science Teachers Preparation 2004-2006
- University Library Committee 2001-2004

FRANK R. SEAVER COLLEGE OF SCIENCE AND ENGINEERING:

- Seaver Leadership Council (SLC) 2022-2025
- Engineering Innovation Complex (EIC) new building task force 2024-2025
- College Faculty Development Committee (Co-chair 2015-2017) 2014-2017
- College Internship Committee 2011-2013
- College Scheduling/Conflict Committee 2007-2012
- College Secondary Science Education Task Force Fall 2011
- College Curriculum Committee Fall 2010
- College New Building User Committee (for new science building) Fall 2008
- College Planning Committee for new science building 2007-Spring 2008
- Freshman Advisor Committee Spring 2008
- Reviewer for LMU internal summer grant 2008

DEPARTMENT OF PHYSICS:

- Faculty Library Representative – Physics Department 2025-present
- Chair of Physics Department 2022-2025
- Academic Curriculum Review Committee 2023-2024
- Academic Program Review Committee 2022-2023
- Faculty Library Representative – Physics Department 2017-2022
- Rank & Tenure revision task force 2021-2022
- Four-unit curriculum task force 2017-2019
- Faculty Library Representative – Physics Department 2008-2013
- Chair of Physics Department 2007-2008
- Faculty Library Representative – Physics Department 2001-2006
- Departmental Search Committees 2001, 2004, 2017, and 2018
- Reviewer of part-time instructors

PROFESSIONAL:

- Reviewer for Galaxies - MDPI
- Reviewer for Monthly Notices of the Royal Astronomical Society
- Reviewer for European Physics Journal Plus
- Reviewer for Indian Journal of Physics – Springer Science Journal
- Reviewer for European Physics Journal C
- Reviewer for Universe - MDPI
- Reviewer for Physics Essays
- Reviewer for Revista Mexicana de Fisica
- Reviewer for Astrophysics and Space Science – Springer Science Journal
- Reviewer for Bentham Science Publishers, eBooks

- Reviewer for JCAP – Journal of Cosmology and Astroparticle Physics – IOP Science
- Reviewer for Physics Letters B – Elsevier Journal
- Reviewer for The Physics Teacher - AAPT
- Reviewer for Foundations of Physics – Springer Science Journal
- Reviewer for Central European Journal of Physics – Springer Versita Journal
- Reviewer for Canadian Journal of Physics

AFFILIATIONS AND PAST AWARDS:

- American Physical Society ([APS](#)), Division of Particles and Fields.
- American Association of Physics Teachers ([AAPT](#)).
- The National Physics Honor Society ([Sigma Pi Sigma](#)).
- Honorary Teaching Award, *Dept. of Physics and Astronomy, UCLA* 1996-1997
- Outstanding Teaching Award, *Dept. of Physics and Astronomy, UCLA* 1995-1996
- Physics Foreign Scholar Award, *Dept. of Physics and Astronomy, UCLA* 1994-1998
- I.N.F.N. (Italian National Institute of Nuclear Physics) Fellowship 1987-1989
- Ansaldo Research Scholarship - Italy 1987-1989

OTHERS

RESEARCH INTERESTS:

- Cosmology and General Relativity. Alternative theories of Gravity. Fractional Gravity.
- Elementary Particle Physics. Astro-Particle Physics and Astrophysics. Cosmic Rays.
- Musical Acoustics and Physics of Musical Instruments.
- Classical and General Physics.

COMPUTER SKILLS:

- Languages: FORTRAN, TeX, LaTeX, HTML.
- Operating Systems: Unix and Windows platforms.
- Application Packages and Tools: Scientific WorkPlace, Origin, MS Office, Mathematica.

PHYSICS CONFERENCES ATTENDED:

- APS Global Physics Summit 2026, Denver, Colorado, March 15-20, 2026.
- APS April Meeting 2024, Sacramento, California, April 3-6, 2024.
- APS April Meeting 2021, Virtual Meeting, April 17-20, 2021.
- APS April Meeting 2020, Virtual Meeting, April 18-21, 2020.
- APS April Meeting 2018, Columbus, Ohio, April 14-17, 2018.
- SCAAPT Meeting, April 2017, Loyola Marymount University, Los Angeles.
- APS April Meeting 2016, Salt Lake City, Utah, April 16-19, 2016.
- APS April Meeting 2015, Baltimore, Maryland, April 11-14, 2015.
- 30th Pacific Coast Gravity Meeting, San Diego, CA, March 2014.
- APS April Meeting 2013, Denver, Colorado, April 13-15, 2013.
- APS April Meeting 2011, Anaheim, California, April 30-May 3, 2011.
- APS April Meeting 2009, Denver, Colorado, May 2-5, 2009.
- APS April Meeting 2008, St. Louis, Missouri, April 12-15, 2008.
- Sources and Detection of Dark Matter in the Universe (DM 2008), Marina del Rey, California, February 20-22, 2008.
- Sources and Detection of Dark Matter in the Universe (DM 2006), Marina del Rey, California, February 22-24, 2006.
- APS April Meeting 2004, Denver, Colorado, May 1-4, 2004.
- Sources and Detection of Dark Matter in the Universe (DM 2004), Marina del Rey, California, February 18-20, 2004.
- AAPT National Meeting 2004, Miami Beach, Florida, January 24-28, 2004.
- Sources and Detection of Dark Matter in the Universe (DM 2002), Marina del Rey, California, February 20-22, 2002.

- 2002 Workshop for New Physics and Astronomy Faculty, AAPT, College Park, Maryland, November 7-10, 2002.
- APS April Meeting 2000 and EUSO Meeting, Long Beach, California, April 29-May 2, 2000.
- Sources and Detection of Dark Matter in the Universe (DM 2000), Marina del Rey, California, February 23-25, 2000.
- OWL/AW Neutrino Workshop, University of California Los Angeles, November 1-3, 1999.
- Division of Particles and Fields Conference (DPF '99), University of California Los Angeles, January 5-9, 1999.
- Sources and Detection of Dark Matter in the Universe (DM '98), Marina del Rey, California, February 18-20, 1998.

ACTIVITIES AND SKILLS:

- Music: classical guitar and lute player.
- Sports: alpine and cross-country skiing.

Last updated: July 2026