# Luc Berge

List of Publications by Year
in descending order

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Version: 2024-02-01

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|---|---|---|---|
| 115<br>papers | 6,341<br>citations | 81900<br>39<br>h-index | 66911<br>78<br>g-index |
| 115<br>all docs | 115<br>docs citations | 115<br>times ranked | 2175<br>citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Ultrashort filaments of light in weakly ionized, optically transparent media. Reports on Progress in Physics, 2007, 70, 1633-1713. | 20.1 | 939 |
| 2 | Wave collapse in physics: principles and applications to light and plasma waves. Physics Reports, 1998, 303, 259-370. | 25.6 | 686 |
| 3 | Self-Guided Propagation of Ultrashort IR Laser Pulses in Fused Silica. Physical Review Letters, 2001, 87, 213902. | 7.8 | 238 |
| 4 | Ultrabroad Terahertz Spectrum Generation from an Air-Based Filament Plasma. Physical Review Letters, 2016, 116, 063902. | 7.8 | 202 |
| 5 | Breakup and Fusion of Self-Guided Femtosecond Light Pulses in Air. Physical Review Letters, 2001, 86, 5470-5473. | 7.8 | 197 |
| 6 | Multiple Filamentation of Terawatt Laser Pulses in Air. Physical Review Letters, 2004, 92, 225002. | 7.8 | 178 |
| 7 | Ultrafast Spatiotemporal Dynamics of Terahertz Generation by Ionizing Two-Color Femtosecond Pulses in Gases. Physical Review Letters, 2010, 105, 053903. | 7.8 | 168 |
| 8 | Tailoring terahertz radiation by controlling tunnel photoionization events in gases. New Journal of Physics, 2011, 13, 123029. | 2.9 | 168 |
| 9 | Self-compression by femtosecond pulse filamentation: Experiments versus numerical simulations. Physical Review E, 2006, 74, 056604. | 2.1 | 144 |
| 10 | Infrared femtosecond light filaments in air: simulations and experiments. Journal of the Optical Society of America B: Optical Physics, 2002, 19, 1117. | 2.1 | 129 |
| 11 | 3D Numerical Simulations of THz Generation by Two-Color Laser Filaments. Physical Review Letters, 2013, 110, 073901. | 7.8 | 125 |
| 12 | Femtosecond Optical Vortices in Air. Physical Review Letters, 2005, 95, 193901. | 7.8 | 105 |
| 13 | Light Filaments in Air for Ultraviolet and Infrared Wavelengths. Physical Review Letters, 2002, 88, 135003. | 7.8 | 102 |
| 14 | Filamentation of femtosecond light pulses in the air: Turbulent cells versus long-range clusters. Physical Review E, 2004, 70, 046602. | 2.1 | 102 |
| 15 | Self-guiding light in layered nonlinear media. Optics Letters, 2000, 25, 1037. | 3.3 | 100 |
| 16 | Nonlinear propagation of self-guided ultra-short pulses in ionized gases. Physics of Plasmas, 2000, 7, 210-230. | 1.9 | 92 |
| 17 | Boosting Terahertz Generation in Laser-Field Ionized Gases Using a Sawtooth Wave Shape. Physical Review Letters, 2015, 114, 183901. | 7.8 | 87 |
| 18 | Multifilamentation transmission through fog. Physical Review E, 2005, 72, 026611. | 2.1 | 85 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Supercontinuum emission and enhanced self-guiding of infrared femtosecond filaments sustained by third-harmonic generation in air. Physical Review E, 2005, 71, 016602. | 2.1 | 80 |
| 20 | Role of the carrier-envelope phase in laser filamentation. Applied Physics B: Lasers and Optics, 2011, 103, 563-570. | 2.2 | 78 |
| 21 | Gas-Induced Solitons. Physical Review Letters, 2001, 86, 1003-1006. | 7.8 | 77 |
| 22 | Modeling the filamentation of ultra-short pulses in ionizing media. Physics of Plasmas, 2000, 7, 193-209. | 1.9 | 75 |
| 23 | Filamentation patterns in Kerr media vs. beam shape robustness, nonlinear saturation and polarization states. Physica D: Nonlinear Phenomena, 2003, 176, 181-211. | 2.8 | 74 |
| 24 | Few-Cycle Light Bullets Created by Femtosecond Filaments. Physical Review Letters, 2008, 100, 113902. | 7.8 | 73 |
| 25 | Self-guiding of femtosecond light pulses in condensed media: Plasma generation versus chromatic dispersion. Physica D: Nonlinear Phenomena, 2006, 220, 14-30. | 2.8 | 69 |
| 26 | Chirp-induced dynamics of femtosecond filaments in air. Optics Letters, 2005, 30, 917. | 3.3 | 68 |
| 27 | Blowing up time-dependent solutions of the planar, Chern-Simons gauged nonlinear Schrodinger equation. Nonlinearity, 1995, 8, 235-253. | 1.4 | 66 |
| 28 | Self-focusing and solitonlike structures in materials with competing quadratic and cubic nonlinearities. Physical Review E, 1997, 55, 3555-3570. | 2.1 | 65 |
| 29 | Formation of stable solitons in quadratic nonlinear media. Physical Review A, 1995, 52, R28-R31. | 2.5 | 63 |
| 30 | Self-channeling of ultrashort laser pulses in materials with anomalous dispersion. Physical Review E, 2005, 71, 065601. | 2.1 | 61 |
| 31 | Temporal Shaping of Femtosecond Solitary Pulses in Photoionized Media. Physical Review Letters, 2003, 90, 053901. | 7.8 | 53 |
| 32 | Femtosecond pulse compression in pressure-gas cells filled with argon. Physical Review E, 2003, 68, 066603. | 2.1 | 53 |
| 33 | Self-compression of 2 Î¼m laser filaments. Optics Express, 2008, 16, 21529. | 3.4 | 48 |
| 34 | Analytical model for THz emissions induced by laser-gas interaction. Optics Express, 2014, 22, 13691. | 3.4 | 47 |
| 35 | Enhanced self-compression of mid-infrared laser filaments in argon. Physical Review A, 2013, 88, . | 2.5 | 46 |
| 36 | Spectral dynamics of THz pulses generated by two-color laser filaments in air: the role of Kerr nonlinearities and pump wavelength. Optics Express, 2017, 25, 4720. | 3.4 | 46 |

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|---|---|---|---|
| 37 | Multisplitting and collapse of selfâ€focusing anisotropic beams in normal/anomalous dispersive media. Physics of Plasmas, 1996, 3, 824-843. | 1.9 | 44 |
| 38 | Temporal Self-Restoration of Compressed Optical Filaments. Physical Review Letters, 2008, 101, 213901. | 7.8 | 43 |
| 39 | Terahertz Pulse Generation in Underdense Relativistic Plasmas: From Photoionization-Induced Radiation to Coherent Transition Radiation. Physical Review Letters, 2018, 120, 144801. | 7.8 | 42 |
| 40 | Soliton stability versus collapse. Physical Review E, 2000, 62, R3071-R3074. | 2.1 | 40 |
| 41 | Saturation of the filament density of ultrashort intense laser pulses in air. Applied Physics B: Lasers and Optics, 2010, 100, 77-84. | 2.2 | 40 |
| 42 | Broadband terahertz radiation from two-color mid- and far-infrared laser filaments in air. Physical Review A, 2018, 97, . | 2.5 | 39 |
| 43 | Terahertz spectroscopy from air plasmas created by two-color femtosecond laser pulses: The ALTESSE project. Europhysics Letters, 2019, 126, 24001. | 2.0 | 39 |
| 44 | <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mo>(</mml:mo><mml:mn>3</mml:mn><mml:mo>+</mml:mo><mml:mn>1</mml:mn><mml:mo>) numerical simulations of femtosecond laser filaments in air: Toward a quantitative agreement with experiments. Physical Review E, 2008, 77, 036406. | 2.1 | 38 |
| 45 | Wavelength scaling of terahertz pulse energies delivered by two-color air plasmas. Optics Letters, 2019, 44, 1488. | 3.3 | 38 |
| 46 | 32TW atmospheric white-light laser. Applied Physics Letters, 2007, 90, 151106. | 3.3 | 34 |
| 47 | Terahertz radiation driven by two-color laser pulses at near-relativistic intensities: Competition between photoionization and wakefield effects. Scientific Reports, 2016, 6, 26743. | 3.3 | 33 |
| 48 | Self-focusing dynamics of nonlinear waves in media with parabolic-type inhomogeneities. Physics of Plasmas, 1997, 4, 1227-1237. | 1.9 | 32 |
| 49 | Terahertz pulse generation by two-color laser fields with circular polarization. New Journal of Physics, 2020, 22, 103038. | 2.9 | 32 |
| 50 | UVâ€“Supercontinuum generated by femtosecond pulse filamentation in air: Meter-range experiments versus numerical simulations. Applied Physics B: Lasers and Optics, 2006, 82, 341-345. | 2.2 | 29 |
| 51 | Hyperbolic Shock Waves of the Optical Self-Focusing with Normal Group-Velocity Dispersion. Physical Review Letters, 2002, 89, 153902. | 7.8 | 28 |
| 52 | Supercontinuum generation of ultrashort laser pulses in air at different central wavelengths. Optics Communications, 2007, 280, 173-182. | 2.1 | 28 |
| 53 | THz field engineering in two-color femtosecond filaments using chirped and delayed laser pulses. New Journal of Physics, 2018, 20, 033026. | 2.9 | 28 |
| 54 | A perturbative analysis of the time-envelope approximation in strong Langmuir turbulence. Physica D: Nonlinear Phenomena, 1996, 95, 351-379. | 2.8 | 27 |

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|---|---|---|---|
| 55 | Self-recompression of laser filaments exiting a gas cell. Physical Review A, 2009, 79, . | 2.5 | 27 |
| 56 | Splittings, coalescence, bunch and snake patterns in the 3D nonlinear SchrÃ¶dinger equation with anisotropic dispersion. Physica D: Nonlinear Phenomena, 2001, 151, 175-198. | 2.8 | 26 |
| 57 | Theory of terahertz emission from femtosecond-laser-induced microplasmas. Physical Review E, 2016, 94, 063202. | 2.1 | 26 |
| 58 | Atmospheric propagation of gradient-shaped and spinning femtosecond light pulses. Physica D: Nonlinear Phenomena, 2006, 223, 163-173. | 2.8 | 25 |
| 59 | Pulse chirping and ionization of O_2 molecules for the filamentation of femtosecond laser pulses in air. Journal of the Optical Society of America B: Optical Physics, 2006, 23, 874. | 2.1 | 24 |
| 60 | THz Generation from Relativistic Plasmas Driven by Near- to Far-Infrared Laser Pulses. Physical Review Letters, 2019, 123, 264801. | 7.8 | 24 |
| 61 | Coalescence and instability of copropagating nonlinear waves. Physical Review E, 1998, 58, 6606-6625. | 2.1 | 23 |
| 62 | Directionality of terahertz emission from photoinduced gas plasmas. Optics Letters, 2011, 36, 3166. | 3.3 | 23 |
| 63 | Directionality of terahertz radiation emitted from an array of femtosecond filaments in gases. Laser Physics Letters, 2014, 11, 125401. | 1.4 | 23 |
| 64 | Defocusing regimes of nonlinear waves in media with negative dispersion. Physical Review E, 1996, 53, R1340-R1343. | 2.1 | 22 |
| 65 | Long-range multifilamentation of femtosecond laser pulses versus air pressure. Optics Letters, 2006, 31, 1301. | 3.3 | 20 |
| 66 | Sub-2fs pulses generated by self-channeling in the deep ultraviolet. Optics Letters, 2008, 33, 750. | 3.3 | 19 |
| 67 | Self-pinching of pulsed laser beams during filamentary propagation. Optics Express, 2009, 17, 16429. | 3.4 | 18 |
| 68 | Terahertz emission from submicron solid targets irradiated by ultraintense femtosecond laser pulses. Physics of Plasmas, 2020, 27, . | 1.9 | 18 |
| 69 | Intensity modulated terahertz vortex wave generation in air plasma by two-color femtosecond laser pulses. Optics Letters, 2019, 44, 3889. | 3.3 | 18 |
| 70 | Terahertz Pulse Generation by Strongly Magnetized, Laser-Created Plasmas. Physical Review Letters, 2022, 128, 174802. | 7.8 | 18 |
| 71 | Time dependent solutions of wave collapse. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 166, 116-122. | 2.1 | 17 |
| 72 | Two-beam interaction in saturable media. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 246, 423-428. | 2.1 | 17 |

| # | Article | IF | Citations |
|---|---|---|---|
| 73 | Transient regimes of anisotropic light beam self-focusing in nonlinear dispersive media. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 189, 290-298. | 2.1 | 16 |
| 74 | Fusion, collapse, and stationary bound states of incoherently coupled waves in bulk cubic media. Physical Review E, 1999, 59, 4600-4613. | 2.1 | 16 |
| 75 | Collapsing dynamics of attractive Boseâ€“Einstein condensates. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 304, 136-142. | 2.1 | 16 |
| 76 | Non-self-similar collapsing solutions of the nonlinear SchrÃ¶dinger equation at the critical dimension. Physical Review E, 1993, 48, R684-R687. | 2.1 | 15 |
| 77 | Terahertz emission from laser-driven gas plasmas: a plasmonic point of view. Optica, 2018, 5, 1617. | 9.3 | 15 |
| 78 | Strong Langmuir turbulence and second harmonic spectra in a 1 Î¼m laserâ€produced plasma. Physics of Fluids B, 1990, 2, 160-165. | 1.7 | 14 |
| 79 | Plasma induced pulse breaking in filamentary self-compression. Laser Physics, 2010, 20, 1107-1113. | 1.2 | 14 |
| 80 | Spectral self-action of THz emission from ionizing two-color laser pulses in gases. New Journal of Physics, 2015, 17, 023060. | 2.9 | 14 |
| 81 | Measurements of magnetic fields using the Zeeman effect in laserâ€produced plasmas. Physics of Fluids, 1987, 30, 2893-2897. | 1.4 | 13 |
| 82 | Collapse of Chern-Simonsâ€“Gauged Matter Fields. Physical Review Letters, 1995, 74, 3907-3911. | 7.8 | 13 |
| 83 | Self-focusing versus stimulated Brillouin scattering of laser pulses in fused silica. New Journal of Physics, 2010, 12, 103049. | 2.9 | 13 |
| 84 | Broadband terahertz emission from two-color femtosecond-laser-induced microplasmas. Physical Review A, 2017, 96, . | 2.5 | 13 |
| 85 | Pulse splitting of self-focusing beams in normally dispersive media. Physical Review A, 1996, 53, 4476-4480. | 2.5 | 12 |
| 86 | All-optical attoclock for imaging tunnelling wavepackets. Nature Physics, 2022, 18, 417-422. | 16.7 | 12 |
| 87 | Wave collapse in bulk media with quadratic and cubic responses. Optics Communications, 1998, 146, 231-235. | 2.1 | 11 |
| 88 | Nonmonotonic increase in laser-driven THz emissions through multiple ionization events. Physical Review A, 2015, 91, . | 2.5 | 11 |
| 89 | Scalar wave collapse at critical dimension. Physical Review A, 1990, 42, 4952-4961. | 2.5 | 10 |
| 90 | Boosted propagation of femtosecond filaments in air by double-pulse combination. Physical Review E, 2004, 69, 065601. | 2.1 | 10 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | Filamentary pulse self-compression: The impact of the cell windows. Physical Review A, 2011, 83, . | 2.5 | 10 |
| 92 | Influence of Four-Wave Mixing and Walk-Off on the Self-Focusing of Coupled Waves. Physical Review Letters, 2000, 84, 3302-3305. | 7.8 | 9 |
| 93 | GPU accelerated fully space and time resolved numerical simulations of self-focusing laser beams in SBS-active media. Journal of Computational Physics, 2013, 235, 606-625. | 3.8 | 9 |
| 94 | Control of lasing filament arrays in nonlinear liquid media. Applied Physics B: Lasers and Optics, 2008, 90, 383-390. | 2.2 | 8 |
| 95 | The fundamental solution of the unidirectional pulse propagation equation. Journal of Mathematical Physics, 2014, 55, 032903. | 1.1 | 8 |
| 96 | Bounded spatial extension of the self-similar collapsing solutions of the nonlinear SchrÃ¶dinger equation. Physica Scripta, 1993, 47, 323-327. | 2.5 | 6 |
| 97 | Influence of multiple ionization in laser filamentation. Journal of Physics B: Atomic, Molecular and Optical Physics, 2014, 47, 204017. | 1.5 | 6 |
| 98 | Langmuir wave collapse with anisotropic contraction rates. Physical Review A, 1990, 42, 4962-4971. | 2.5 | 5 |
| 99 | Non-self-similar inertial regimes of the scalar supersonic Langmuir collapse. Physica D: Nonlinear Phenomena, 1994, 72, 87-94. | 2.8 | 4 |
| 100 | Dynamical stability analysis of strong/weak wave collapses. Journal of Mathematical Physics, 1994, 35, 5765-5780. | 1.1 | 4 |
| 101 | Effect of nonlinear dispersion on pulse self-compression in a defocusing noble gas. Physica D: Nonlinear Phenomena, 2011, 240, 963-970. | 2.8 | 4 |
| 102 | Terahertz pulse generation by multi-color laser fields with linear versus circular polarization. Optics Letters, 2021, 46, 5906. | 3.3 | 4 |
| 103 | Air-photonics terahertz platform with versatile micro-controller based interface and data acquisition. Review of Scientific Instruments, 2022, 93, 033004. | 1.3 | 4 |
| 104 | Collapsing solutions of the Zakharov equations with anisotropic contraction rates. Physica D: Nonlinear Phenomena, 1991, 52, 59-62. | 2.8 | 2 |
| 105 | Compression of ultrashort UV pulses in a self-defocusing gas. Physical Review A, 2010, 81, . | 2.5 | 2 |
| 106 | Validity of the unidirectional propagation model: application to laser-driven terahertz emission. Journal of Physics Communications, 2017, 1, 055009. | 1.2 | 2 |
| 107 | Numerical simulation of the X-ray energetics in spherical plasmas. Laser and Particle Beams, 1988, 6, 343-351. | 1.0 | 1 |
| 108 | Self-similar regimes of anisotropic collapses. Laser and Particle Beams, 1991, 9, 371-379. | 1.0 | 1 |

| # | Article | IF | Citations |
|---|---|---|---|
| 109 | Self-similar Langmuir collapse at critical dimension. Laser and Particle Beams, 1991, 9, 363-370. | 1.0 | 1 |
| 110 | Interplay between stimulated Brillouin scattering and Kerr filamentation with an inertial plasma response. Physical Review A, 2014, 89, . | 2.5 | 1 |
| 111 | Vortex terahertz wave generation in air by femtosecond optical vortex pulses. , 2019, , . | | 1 |
| 112 | Foreword on the special issue on the science of light. Europhysics News, 2015, 46, 12-12. | 0.3 | 0 |
| 113 | Terahertz pulse generation by multi-color laser fields with linear vs. circular polarization. , 2021, , . | | 0 |
| 114 | Terahertz emissions by plasmas created from moderate to relativistic laser intensities. , 2021, , . | | 0 |
| 115 | Terahertz pulses generated by classical or relativistic laser-gas interaction: Sources and Applications. , 2020, , . | | 0 |