Curriculum Resumido

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28 de noviembre de 2023

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1. Datos generales

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artículos científicos manuel fernández guasti

servidor de luz [luminous server]

luz-wiki colaboración académica delocalizada [delocalized academic collaboration]

Referencias

[1] **2023a**. "Medición directa de la polarización de la luz". En: *Revista Mexicana de Física*. en consideración.

[2] **2023b**. "Advances in number theory and applied analysis". En: ed. por P. Debnath, H. M. Srivastava, K. Chakraborty y P. Kumam. Singapore: World Scientific. Cap. 9: The components exponential function in scator hypercomplex space: planetary elliptical motion and three body choreographies, págs. 195-230. ISBN: 978-981-127-259-2.

[3] **2023c**. "Imaginary Scators Quadratic Mapping In 1+2D Dynamic Space". En: *Communications in Nonlinear Science and Numerical Simulation* 125, pág. 107364. ISSN: 1007-5704.

[4] **2023d**. "Multiplicity of scator roots and the square roots in S^{1+2}". En: *Journal of New Theory* 42, págs. 29-42. ISSN: 2149-1402.

[5] **2023e**. "The cusphere". En: *Journal of Mathematics and the Arts*, págs. 1-17. ISSN: 1751-3472.

[6] **2023f**. "Vector wave solutions in electrodynamics: The Heaviside-Larmor symmetry and tiered potential invariance". En: *Physica Scripta* 98.10, pág. 105511. ISSN: 0031-8949.

[7] **2022a**. "An algebra for the brain". En: Standby.

[1] *The European Physical Society (EPS) subscribes to the principle that the results of publicly funded research must be widely available to the scientific community and to the general public, with no paywalls for authors and readers, and across all scientific disciplines.*

[8] **Nov. de 2022**. "Energy exchange in the dissipative time-dependent harmonic oscillator: Physical interpretation of the Ermakov invariant". En: *Pramana* 96.4, págs. 1-14. ISSN: 0973-7111.

[9] **2022c**. "Quantum uncertainty: $\Delta x \Delta p$ experimental evaluation and direct visualization". En: *Phys. Lett. A* 488, pág. 128332. ISSN: 0375-9601.

[10] **Ene. de 2022**. "Time and space resolved first order optical interference between distinguishable photon paths". En: *Frontiers in Physics* 9.Quantum Engineering and Technology, págs. 1-10. ISSN: 2296-424X.

[11] **2021a**. "Powers of elliptic scator numbers". En: *Axioms* 10.4, pág. 250. ISSN: 2075-1680.

[12] **2021b**. "Roots of elliptic scator numbers". En: *Axioms* 10.4, pág. 321. ISSN: 2075-1680.

[13] **2021c**. "Roots of second order polynomials with real coefficients in elliptic scator algebra". En: *Journal of New Theory* 36, págs. 39-48. ISSN: 2149-1402.

[14] **2021d**. "Tiered structure and symmetry of the electromagnetic equations". En: *Journal of Modern Optics* 68.20, págs. 1134-1146. ISSN: 1362-3044.

[15] **Oct. de 2020**. "COVID-19 dynamical evolution prediction in Mexico, decision making and social implementation: mid/low income countries study". En: *Technium: Romanian Journal of Applied Sciences and Technology* 2.7, págs. 107-117. ISSN: 2668-778X.

[16] **2020b**. "Components exponential scator holomorphic function". En: *Math. Meth. App. Sci.* 43, págs. 1017-1034. ISSN: 1099-1476.

[17] **2020c**. "Composition of velocities in a scator deformed Lorentz metric". En: *Eur. Phys. J. Plus* 135, pág. 542. ISSN: 2190-5444.

[18] **Ago. de 2020**. "Energy density and flow in one dimensional linear transverse waves in a string". En: *Springer Nature - Applied Sciences* 2.8, pág. 1447. ISSN: 2523-3971.

[19] **2020e**. "Helicity of EM pulses with Gaussian envelope". En: *2019 PhotonIcs Electromagnetics Research Symposium - Spring (PIERS-Spring)*. IEEE Xplore, págs. 705-713. ISBN: 978-1-7281-3403-1.

[20] **2020f**. "Tiered Structure of Maxwell's Equations". En: *2019 PhotonIcs Electromagnetics Research Symposium - Spring (PIERS-Spring)*. Rome, Italy.: IEEE xplore, págs. 339-344. ISBN: 978-1-7281-3403-1.

[21] **2020g**. "Optical Interference between Distinguishable Photon Paths". En: *2019 PhotonIcs Electromagnetics Research Symposium - Spring (PIERS-Spring)*. IEEE Xplore, págs. 3634-3642. ISBN: 978-1-7281-3403-1.

[22] **2020h**. *Time and space resolved first order optical interference between distinguishable photon paths*. https://arxiv.org/abs/2007.15451.

[23] **2020i**. "Ermakov-Lewis Invariant for Two Coupled Oscillators". En: *Journal of Physics: Conference Series*. Quantum Fest 2019 1540, pág. 012009. ISSN: 2624-960X.

[24] **2019a**. "Chirality, helicity and the rotational content of electromagnetic fields". En: *Physics Letters A* 383, págs. 3180-3186. ISSN: 0375-9601.

[25] **2019b**. "Gauge invariance of the helicity continuity equation". En: *Annals of Physics* 406, págs. 186-199. ISSN: 0003-4916.

[26] **2019c**. "Helicity continuity equation for EM fields with sources". En: *Journal of Modern Optics* 66.11, págs. 1265-1271. ISSN: 0950-0340.

[27] **2019d**. "La cusfera: superficie isométrica de los escatores hipercomplejos". En: in print. SUMEM.

[28] **2019e**. "Squdel function: square wave approximation without ringing". En: *Circuits, Systems and Signal Processing* 38.2, págs. 764-773. ISSN: 0278-081X.

[29] **2019f**. "Helicity and spin of linearly polarized Hermite-Gaussian modes". En: *Advances in Mathematical Physics* 2019. ISSN: 1687-9120.

[30] **2019g**. "Fabry-Perot etalon solved by an amplitude and phase approach". En: *Optik* 185, págs. 397-404. ISSN: 0030-4026.

[31] **2019h**. "Solution to the Time-Dependent Coupled Harmonic Oscillators Hamiltonian with Arbitrary Interactions". En: *Quantum Rep.* 1, págs. 82-90. ISSN: 2624-960X.

[32] **2018a**. "Associativity in scator algebra and the quantum wavefunction collapse". En: *Universal Journal of Mathematics and Applications* 1.2, págs. 80-88. ISSN: 2619-9653.

[33] **2018b**. "Differential quotients in elliptic scator algebra". En: *Math. Meth. App. Sci.* 41.12, págs. 4827-4840. ISSN: 1099-1476.

[34] **2018c**. "Energy content in time dependent linear restoring force systems". En: *Physics Letters A* 382.45, págs. 3231-3237. ISSN: 0375-9601.

[35] **2018d**. "Quantum harmonic oscillator with time dependent mass". En: *Modern Physics Letters B* 32.30, pág. 1850235. ISSN: 0217-9849.

[36] **Dic. de 2017**. "Solutions to a periodic nonlinear differential equation: nonlinear Floquet theorem". En: *International Journal of applied and computational Mathematics* 3.4, págs. 3379-3388. ISSN: 2349-5103.

[37] **2016**. "Imaginary Scators Bound Set Under The Iterated Quadratic Mapping In 1+2 Dimensional Parameter Space". En: *Int. J. of Bifurcation and Chaos* 26.1, pág. 1630002.

[38] **Oct. de 2015**. "A non-distributive extension of complex numbers to higher dimensions". En: *Adv. Appl. Clifford Algebras* 25, págs. 829-849. ISSN: 0188-7009, 1661-4909.

[39] **2015b**. "Analytical solution to a non autonomous second order differential equation with modified hyperbolic tangent function". En: *J. Opt.* 17.3, pág. 035612. ISSN: 2040-8978.

[40] **2015c**. "Corrigendum: Dielectric interfaces and mirrors in the amplitude and phase representation". En: *J. Mod. Optics* 62.19, págs. 1692-1692. ISSN: 0950-0340 Print, 1362-3044 Online.

[41] **2015d**. "Dielectric interfaces and mirrors in the amplitude and phase representation". En: *J. Mod. Optics* 62.4, págs. 265-271. ISSN: 0950-0340 Print, 1362-3044 Online.

[42] **2015e**. "Erratum: A non-distributive extension of complex numbers to higher dimensions". En: *Adv. Appl. Clifford Algebras* 25, pág. 851. ISSN: 0188-7009, 1661-4909.

[43] **2015f**. "Fractals with hyperbolic scators in 1+2 dimensions". En: *Fractals* 23.2, pág. 1550004. ISSN: 0218-348X, 1793-6543.

[44] **2015g**. "Photonic crystal with triangular stack profile". En: *Optics Comm.* 346, págs. 133-140. ISSN: 0030-4018.

[45] **2015h**. "Hyperbolic superluminal scator algebra". En: *Adv. Appl. Clifford Algebras* 25.2, págs. 321-335. ISSN: 0188-7009, 1661-4909.

[46] **2014a**. "Reflection coefficient due to a discontinuity in the nth order derivative of the refractive index". En: *Journal of Optics* 16, págs. 015707-10. ISSN: 2040-8978.

[47] **2014b**. "An intrinsically three dimensional fractal". En: *Int. J. of Bifurcation and Chaos* 24.6, págs. 1430017–1-13.

[48] **2014c**. "Time and space transformations in a scator deformed Lorentz metric". En: *European Physical Journal - Plus* 129.195, págs. 1-10. ISSN: 2190-5444.

[49] **2014d**. "Multiplicative representation of a hyperbolic non distributive algebra". En: *Adv. Appl. Clifford Algebras* 24.3, págs. 661-674. ISSN: 0188-7009, 1661-4909.

[50] **2013a**. "Novel method to compute high reflectivity of multilayered mirrors with rugate features". En: vol. TC2. Optical Interference Coatings 2. Whistler, Canada: OSA. ISBN: 978-1-55752-970-1.

[51] **2013b**. "Phase Change of Light Reflected by a Discontinuity in the Derivatives of the Refractive Index". En: *Optics Comm.* 294, págs. 64-72. ISSN: 0030-4018.

[52] **2013c**. "Escultura métrica: escatores imaginarios en 1+2 dimensiones y la escala humana". En: *Cyberspace and the Quest for a Materialistic Epistemology of Liberation*. Ed. por H. Dieterich. Druck y Verlag GmbH, págs. 141-148. ISBN: 3-932-210-12-9.

[53] **2013d**. "Enhanced reflection from derivative discontinuities in the refractive index of a triangular stack profile". En: vol. TC3. Optical Interference Coatings 3. Whistler, Canada: OSA. ISBN: 978-1-55752-970-1.

[54] **2013e**. "A hyperbolic non distributive algebra in 1+2 dimensions". En: *Adv. Appl. Clifford Algebras* 23.3, págs. 639-653. ISSN: 0188-7009, 1661-4909.

[55] **2013f**. "An elliptic non distributive algebra". En: *Adv. Appl. Clifford Algebras* 23.4, págs. 825-835. ISSN: 0188-7009, 1661-4909.

[56] **2012a**. "Reflectivity of a disordered mono-layer estimated by graded refractive index and scattering models". En: *JOSA A* 29.9, págs. 1912-1921. ISSN: 1084-7529.

[57] **2012b**. "Green's second identity for vector fields". En: *ISRN Mathematical Physics* 2012. Article ID: 973968, pág. 7. ISSN: 1084-7529/12/091912-10.

[58] **2012c**. "Lagrange's identity obtained from product identity". En: *Int. Math. Forum* 7.52, págs. 2555-2559. ISSN: 1312-7594.

[59] **2012d**. "Generalización de la relación de Snell del ángulo de refracción". En: *Opt. pura y appl.* 45.3, págs. 377-385.

[60] **2012e**. "Femtosecond Laser Cavity Characterization". En: *Laser Pulses - Theory, Technology, and Applications*. Ed. por I. Peshko. Intech, págs. 35-72. ISBN: 978-953-51-0796-5.

[61] **2011a**. "Xochicalco: Tlayohualchieliztli or Camera Obscura". En: *International commission for optics 2011*. Vol. 8011. ICO-22 80119O. SPIE, 80119O–1-13.

[62] **2011b**. "Reflected wave atypical phase change at a boundary". En: *International commission for optics 2011*. Vol. 8011. ICO-22 80115U-1. SPIE, 80115U–1-6.

[63] **2011c**. "Alternative realization for the composition of relativistic velocities". En: *Optics and Photonics 2011*. Vol. 8121. The nature of light: What are photons? IV. SPIE, págs. 812108–1-11.

[64] **2011d**. "The necessity of two fields in wave phenomena". En: *Optics and Photonics 2011*. Vol. 8121. The nature of light: What are photons? IV. SPIE, 81210R–1-12.

[65] **2011e**. "Stratified media: nonlinear ODE is better". En: *International commission for optics 2011*. Vol. 8011. ICO-22 80116D. SPIE, págs. 80116D–1-10.

[66] **2011f**. "Physical processes behind a Ti:Sa femtosecond oscillator". En: *Optics and Photonics 2011*. Vol. 8121. The nature of light: What are photons? IV. San Diego: SPIE, págs. 812118–1-10.

[67] **2011g**. "Coherence and frequency spectrum of a Nd:YAG laser - generation and observation devices". En: *Optics and Photonics 2011*. Vol. 8121. The nature of light: What are photons? IV. San Diego: SPIE, 81211E–1-10.

[68] **2011h**. "Composition of physical quantities in one dimension: Group-theoretic differentiable functions". En: *American Journal of Physics* 79.10, págs. 1060-1063. ISSN: 0002-9505.

[69] **Dic. de 2010**. *Light Propagation at Soft Interface*. URL: https://demonstrations.wolfram.com/LightPropagationAtSoftInterface.

[70] **2010b**. "Charge motion under ultrafast harmonic wave switching". En: *Symposium on Condensed Matter Physics*. Ed. por M. Martinez-Mares y J. A. Moreno-Razo. Vol. 1319. IV Mexican Meeting on Experimental and Theoretical Physics. AIP conference proceedings, págs. 57-69. ISBN: 978-0-7354-0874-6.

[71] **Sep. de 2010**. "Mesa Holográfica pasiva ultra-estable: análisis de vibraciones". En: *XXIII reunión anual de óptica*.

[72] **2010d**. "Laser Induced fluorescence in mononuclear cells: direct estimate of the NADH bound/free ratio". En: *New trends in statistical physics*. Ed. por A. Macias y L. Dagdug. World Scientific. Cap. 13, págs. 199-217. ISBN: 978-981-4307-53-6.

[73] **2009a**. "Light propagation in 1D inhomogeneous deterministic media: the effect of discontinuities". En: *J. Opt. A: Pure Appl. Opt.* 11, págs. 045712-8. ISSN: 1464-4258 print, 1361-6617 on line.

[74] **2009b**. "The Wronskian and the Ermakov - Lewis invariant". En: *International Mathematical Forum* 4.16, págs. 795-804. ISSN: 1312-7594.

[75] **Mar. de 2009**. "How to obtain the Lorentz space contraction formula for a moving rod from a knowledge of the positions of its ends at different times". En: *European Journal of Physics* 30.2, págs. 253-258.

[76] **2009d**. "Laser induced microstructuring of silicon under different atmospheres". En: *Radiation Effects and Defects in Solids* 164.7, págs. 443-451.

[77] **2009e**. "Optical realization of quantum mechanical invariant". En: *Optics Lett.* 34.9, págs. 1459-1461. ISSN: 0146-9592 (print), 1539-4794 (online).

[78] **Ene. de 2009**. "La contracción de Lorentz en relatividad especial". En: *Lat. Am. J. Phys. Educ.* 3.1, págs. 117-120. ISSN: 1870-9095.

[79] **2007a**. "Péndulo de longitud variable: experimentos". En: *Revista Mexicana de Física E* 53, págs. 120-126.

[80] **2007b**. "The Nonlinear Amplitude Equation in Harmonic Phenomena". En: *Nonlinear Phenomena Research Perspectives*. New York: Nova Publishers. Cap. 6, págs. 177-223. ISBN: 1-60021-520-3.

[81] **2007c**. "Time dependent quantum harmonic oscillator subject to a sudden change of mass: continuous solution". En: *Revista Mexicana de Física* 53.1, págs. 42-46.

[82] **2006a**. "Measuring the contour of a wavefront using the Irradiance Transport Equation". En: vol. 6034, 60341R-1.

[83] **2006b**. "Attainable conditions and exact invariant for the time-dependent harmonic oscillator". En: *J. Phys. A: Math. Gen.* 39, págs. 11825-11832.

[84] **2006c**. "Indeterminacy of amplitude and phase variables in classical dynamical systems: the harmonic oscillator". En: *Europhysics Letters* 74.6, págs. 1013-1019.

[85] **2006d**. "Espectroscopía de fluorescencia inducida por láser en células". En: *La física biológica en México: Temas selectos*. Ed. por Leopoldo García-Colín Scherer, Leonardo Dagdug, Pedro Miramontes y Arturo Rojo. El Colegio Nacional, págs. 487-508.

[86] **2006e**. "Normal and anti-normal ordered expressions for annihilation and creation operators". En: *Revista Mexicana de Física* 52.1, págs. 13-16.

[87] **2005a**. "Blending Two Major Techniques in Order to Compute pi". En: *International Journal of Mathematical Education in Science and Technology* 36, págs. 85-92.

[88] **2005b**. "LCD pixel shape and far field diffraction patterns". En: *Optik* 116, págs. 265-269.

[89] **2005c**. "IR and UV laser-induced morphological changes in silicon surface under oxygen atmosphere". En: *physica status solidi (c)* 2.10, págs. 3798-3801.

[90] **2004a**. "Analytic approximation to the harmonic oscillator equation with a sub-period time dependent parameter". En: *Physica D: Nonlinear phenomena* 189, págs. 188-198.

[91] **2004b**. "Complementary fields conservation equation derived from the scalar wave equation". En: *J. Phys. A: Math. Gen.* 37.13, págs. 4107-4121.

[92] **2003a**. "Image reconstruction via phase conjugation in amorphous chalcogenide thin films". En: *Optics Communications* 221, págs. 37-42.

[93] **2003b**. "Orthogonal functions exact invariant and the adiabatic limit for time-dependent harmonic oscillators". En: *Developments in mathematical and experimental physics*. Ed. por A. Macias, F. Uribe y E. Diaz. Vol. C. C: Hydrodynamics and dynamical systems. Springer US, págs. 159-166. ISBN: 978-0-306-47401-9.

[94] **2003c**. "Amplitude and phase representation of monochromatic fields in physical optics". En: *JOSA A* 20.8, págs. 1629-1634.

[95] **2003d**. "Amplitude and phase representation of quantum invariants for the time dependent harmonic oscillator". En: *Physical Review A* 67.063803, págs. 063803–1-5.

[96] **2003e**. "Solution of the Schrödinger equation for time dependent 1D harmonic oscillators using the orthogonal functions invariant". En: *J. Phys. A: Math. Gen.* 36.8, págs. 2069-2076.

[97] **2003f**. "Coherent states for the time dependent harmonic oscillator". En: *Physics Letters A* 311, págs. 1-5.

[98] **2002a**. "Spectroscopic studies of two perpendicularly interacting carbon plasmas generated by laser ablation". En: *Appl. Surface Science* 197, págs. 239-245.

[99] **2002b**. "Orthogonal functions invariant for the time dependent harmonic oscillator". En: *Physics Letters A* 292, págs. 243-245.

[100] **2001**. "El teorema de Poynting para campos complejos". En: *Revista Mexicana de Física* 47, págs. 105-106.

[101] **2000**. "Ermakov equation arising from electromagnetic fields propagating in 1D". En: *Revista Mexicana de Física* 46, págs. 530-535.

[102] **1999a**. "Synthesis and characterization of sodium chloride thin films obtained by pulsed laser deposition". En: *Applied Physics A* 69, S491-S493.

[103] **1999b**. "Plasma dynamics inferred from the optical emission spectra during diamond-like thin film pulsed laser deposition". En: *Diamond and Related Materials* 8, págs. 1277-1284.

[104] **1999c**. "Growth of rutile TiO2 thin films laser ablation". En: *Surface Engineering* 15.5, págs. 411-414.

[105] **1999d**. "Structural characterization of TiO2 thin films obtained by pulsed laser deposition". En: *Applied Surface Science* 137, págs. 38-44.

[106] **1999e**. "Strutctural and optical properties of Bi12SiO20 thin films obtained by pulsed laser deposition". En: *Applied Physics A* 69, S949-S952.

[107] **1999f**. "Thin film deposition of transparent materials by rear side laser ablation: a novel configuration". En: *Applied Physics A* 69, S583-S586.

[108] **1998a**. "Plasma Dynamics and its relationship with thin film properties of PLD CdTe via Pulsed Laser Deposition". En: *Applied Physics B* 66.5, págs. 639-643.

[109] **1998b**. "Nd :YAG laser in art works restoration". En: *Rev. Metal. Madrid* 34, págs. 98-100.

[110] **1998c**. "MicroRaman characterization of WO3 and MoO3 thin films obtained by pulsed laser irradiation". En: *Applied Surface Science* 127, págs. 674-678.

[111] **1997a**. "Photo luminescent Thin Films of Terbium Chloride doped Yttrium Oxide Deposited by the Pulsed Laser Ablation technique". En: *Thin Solid Films* 303, págs. 76-83.

[112] **1997b**. "Raman Characterization of Bi12SiO20 thin films obtained by pulsed laser deposition". En: *Applied Surface Science* 109, págs. 359-361.

[113] **1997c**. "Multiple path telescope : Third Order Design". En: *Applied Optics* 36, págs. 6399-6402.

[114] **1995a**. "Analytical study of the Optical Parameters for a Multiple Path Telescope". En: *Applied Optics* 34.16, págs. 2908-2913.

[115] **1995b**. "Pulsed Laser Deposition of Selenium". En: *Journal of Materials Science* 30, págs. 6253-6256.

[116] **1995c**. "Thickness Dependence of the Phase Conjugate Signal of Amorphous Selenium Thin Films". En: *Optics Communications* 119, págs. 154-158.

[117] **1994a**. "Anomalous Conical Emission in Calcium Vapour". En: *Optics Comm.* 108, págs. 367-376.

[118] **1994b**. "Anomalous Conical Emission: Two-beam Experiments". En: *Phys. Rev. A* 49.1, págs. 613-615.

[119] **1994c**. "Phase Conjugation and Spatial Grating Formation in Amorphous Selenium". En: *Physica A* 207, págs. 329-333.

[120] **1994d**. "Obtención de capas delgadas por ablación láser". En: *Revista Mexicana de Física* 40.4, págs. 798-804.

[121] **1993a**. "Diffraction pattern of a circle/square aperture". En: *Journal of Modern Optics* 40.6, págs. 1073-1080.

[122] **1993b**. "Láser de pigmento con retroalimentación distribuida: generación de pulsos ópticos de hasta 74 ps". En: *Rev. Mex. Fís.* 39.2, págs. 214-228.

[123] **1992a**. "Técnicas de blanqueado de emulsiones holográficas". En: *Rev. Mex. Fís.* 38.3, págs. 464-477.

[124] **1992b**. "Analytic geometry of some rectilinear figures". En: *Int. Jour. of Math. Ed. in Sci. & Tech.* 23.6, págs. 895-901.

[125] **1992c**. "Laser induced diffraction patterns in germanium diselenide amorphous films". En: *Appl. Optics* 31.18, págs. 3453-3459.

[126] **1992d**. "Diseño y construcción de láseres de nitrógeno molecular". En: *Rev. Mex. Fís.* 38.4, págs. 588-610.

[127] **1992e**. "Phase conjugation in amorphous selenium thin films". En: *Optics Lett.* 17.4, págs. 252-254.

[128] **1991a**. "Phase conjugation in amorphous germanium diselenide thin films". En: *Appl. Phys. Lett.* 58.11, págs. 1137-1139.

[129] **1991b**. "Generación de segundo armónico en ADP con un láser de pigmento sintonizable en el rango de 285nm a 300nm". En: *Rev. Mex. Fís.* 37.2, págs. 309-320.

[130] **1990a**. "Diseño y construcción de láseres de pigmento". En: *Rev. Mex. Fís.* 36.1, págs. 118-130.

[131] **1990b**. "Preparation and characterization of amorphous GeSe2 films". En: *Mat. Sci. Eng.* 5, págs. 423-426.

[132] **1989a**. "Fabricación de hologramas con un láser sintonizable pulsado". En: *Rev. Mex. Fís.* 35.3, págs. 410-417.

[133] **1989b**. "Optical Bistability in bulk GeSe2". En: *Opt. Comm.* 70.1, págs. 70-72.
[134] **1988a**. "Mesa holográfica estable a un costo mínimo". En: *Rev. Mex. Fís.* 33.4, págs. 631-639.
[135] **1988b**. "Propagation of rays in a duct with a radially variable refractive index: first integral solutions for Gaussian profiles". En: *Opt. Comm.* 69.2, págs. 105-107.