

PRODUCCIÓN CIENTÍFICA DEL
INSTITUTO DE INVESTIGACIONES
EN MATEMÁTICAS APLICADAS
Y EN SISTEMAS

ARTÍCULOS EN REVISTAS ARBITRADAS 2009

1. **Aguilar, W., Frauel, Y., Escolano, F., Martínez, M.E., Espinosa, A. and Lozano, M.A.** [A robust graph transformation matching for non-rigid registration](#). *Image and Vision Computing*. Holanda, 2009, Vol. 27, No. 7, p. 897-910.
2. **Lozano, M.A., Escolano, F., Bonev, B., Suau, P., Aguilar, W., Sáez, J.M. and Cazorla, M.A.** [Region and constellations based categorization of images with unsupervised graph learning](#). *Image and Vision Computing*. Holanda, 2009, Vol. 27, No. 7, p. 960-978.
3. **Manzo, L., Sánchez, S. and Álvarez, R.** [Assessment of seasonal forest fire risk using NOAA-AVHRR: a case in central Mexico](#). *International Journal of Remote Sensing*. Holanda, 2009, Vol. 30, No. 19, p. 4991-5013.
4. **Barberis, P. and Bienert, M.** [Propagation of small fluctuations in electromagnetically induced transparency: Influence of Doppler width](#). *Physical Review A (Atomic, Molecular and Optical Physics)*. EUA, 2009, Vol. 79, No. 6, Art. 063824, 13 p.
5. **Benítez, H., Cárdenas, F. y García, F.** [Red reconfigurable mediante el modelo de control predictivo para tres bandas transportadoras como caso de estudio](#). *Información Tecnológica*. Chile, 2009, Vol. 20, No. 1, p. 111-127.
6. **Benítez, H. and Benítez, A.** [The use of ARMAX strategy and self organizing maps for feature extraction and classification for fault diagnosis](#). *International Journal of Innovative Computing Information and Control IJICIC*. Japón, 2009, Vol. 5, No. 12, p. 4787-4796.
7. **Méndez, P.E. and Benítez, H.** [Supervisory fuzzy control for networked control systems](#). *International Journal of Innovative Computing Information and Control IJICIC, Express Letters*. Japón, 2009, Vol. 3, No. 2, p. 233-240.
8. **Bladt, M. and Sørensen, M.** [Efficient estimation of transition rates between credit ratings from observations at discrete time points](#). *Quantitative Finance*. RU, 2009, Vol. 9, No. 2, p. 147-160.
9. **Bribiesca, E.** [Contact knots](#). *International Journal of Mathematical Analysis*. Bulgaria, 2009, Vol. 3, No. 39, p. 1923-1944.

10. Montero, R.S. and **Bribiesca, E.** [State of the art of compactness and circularity measures](#). International Mathematical Forum. Bulgaria, 2009, Vol. 4, No. 27, p. 1305-1335.
11. Sánchez, H. and **Bribiesca, E.** [Polygonal approximation of contour shapes using corner detectors](#). Journal of Applied Research and Technology. México, 2009, Vol. 7, No. 3, p. 275-291.
12. **Contreras, A., Mena, R.H. and Walker, S.G.** [On the construction of stationary AR\(1\) models via random distributions](#). Statistics. Alemania, 2009, Vol. 43, No. 3, p. 227-240.
13. **Contreras, A. and González-Barrios, J.M.** [A nonparametric test for symmetry based on Freeman and Halton's ideas on contingency tables](#). Communications in Statistics—Simulations and Computation. EUA, 2009, Vol. 38, No. 9, p. 1856-1869.
14. **Cruz, G., Esteva, L. and Vargas, C.** [Seasonality and outbreaks in west Nile virus infection](#). Bulletin of Mathematical Biology. EUA, 2009, Vol. 71, No. 6, p. 1378-1393.
15. **Cruz, G., Durán, L., Esteva, L., Minzoni, A.A., López, M., Panayotaros, P., Ahued, A. and Villaseñor, I.** [Modelling of the influenza A\(H1N1\)v outbreak in Mexico City, April–May 2009, with control sanitary measures](#). Eurosurveillance. Francia, 2009, Vol. 14, No. 26, Art. 19254.
16. Damanik, D. and **Del Río, R.** [Quantum dynamical applications of Salem's theorem](#). Letter in Mathematical Physics. Holanda, 2009, Vol. 89, No. 1, p. 13-19.
17. Bulit, C., **Díaz, C.** and Montagnes, D.J.S. [Scaling patterns of plankton diversity: a study of ciliates in a tropical coastal lagoon](#). Hydrobiologia. Holanda, 2009, Vol. 624, No. 1, p. 29-44.
18. Bulit, C. and **Díaz, C.** [Patrones de diversidad de ciliados del plancton en la laguna de Chautengo, Guerrero, México](#). Hidrobiológica. México, 2009, Vol. 19, No. 2, p. 109-118.
19. **Flores, G. and Plaza, R.G.** [Stability of post-fertilization traveling waves](#). Journal of Differential Equations. EUA, 2009, Vol. 247, No. 5, p. 1529-1590.
20. **Gershenson, C. and Pineda, L.A.** [Why does public transport not arrive on time? The pervasiveness of equal headway instability](#). PLoS ONE. EUA, 2009, Vol. 4, No. 10, Art. No.e7292.
21. **Gil, J. y Ruiz, A.A.** [Análisis de las publicaciones de investigadores del Subsistema de la Investigación Científica de la Universidad Nacional Autónoma de México 1981–2003](#). Revista Redes. España, 2009, Vol. 17, No. 1, p. 1-38.
22. **Gómez, S., Severino, G., Randazzo, L., Toraldo, G. and Otero, J.M.** [Identification of the hydraulic conductivity using a global optimization method](#). Agricultural Water Management. Holanda, 2009, Vol. 96, No. 3, p. 504-510.
23. England, R., **Gómez, S.** and Lamour, R. [The properties of differential-algebraic equations representing optimal control problems](#). Applied Numerical Mathematics. EUA, 2009, Vol. 59, No. 10, p. 2357-2373.

24. Nichita, D.V., *De-Hemptinne, J.C. and Gómez, S.* [Isochoric phase stability testing for hydrocarbon mixtures](#). *Petroleum Science and Technology*. EUA, 2009, Vol. 27, No. 18, p. 2177-2191.
25. Nichita, D.V. and **Gómez, S.** [Efficient location of multiple global minima for the phase stability problem](#). *Chemical Engineering Journal*. Holanda, 2009, Vol. 152, No. 1, p. 251-263.
26. **González, J.**, López, R.R. and Minjárez, A. [Approximation, estimation and control of stochastic systems under a randomized discounted cost criterion](#). *Kybernetika*. República Checa, 2009, Vol. 45, No. 5, p. 737-754.
27. **Gutiérrez, E.**, **Rueda, R.** and **Contreras, A.** [Objective parametric model selection procedures from a Bayesian nonparametric perspective](#). *Computational Statistics and Data Analysis*. Holanda, 2009, Vol. 53, No. 12, p. 4255-4265.
28. Cisneros, L.A., Ize, J. and Minzoni, A.A. [Modulational and numerical solutions for the steady discrete Sine-Gordon equation in two space dimensions](#). *Physica D: Nonlinear Phenomena*. EUA, 2009, Vol. 238, No. 14, p. 1229-1240.
29. Chiang, M.F., Gelman, R., **Martínez, M.E.**, Du, Y.E., Casper, D.S., Currie, L.M., Shah, P.D., Starren, J. and Flynn, J.T. [Image analysis for retinopathy of prematurity diagnosis](#). *Journal of the American Association for Pediatric Ophthalmology and Strabismus (JAAPOS)*. EUA, 2009, Vol. 13, No. 5, p. 438-445.
30. Mahal, S., Strain, W.D., **Martínez, M.E.**, Thom, S.A.M., Chaturvedi, N. and Hughes, A.D. [Comparison of the retinal microvasculature in European and African-Caribbean people with diabetes](#). *Clinical Science*. RU, 2009, Vol. 117, No. 5-6, p. 229-236.
31. Zepeda, L.C., **Martínez, M.E.**, Ramírez, M.A. and Gutiérrez, J.A. [RetCam compression artifact can mask plus disease](#). *Eye*. RU, 2009, Vol. 23, No. 12, p. 2266-2267.
32. Favaro, S., Lijoi, A., **Mena, R.H.** and Prünster, I. [Bayesian non-parametric inference for species variety with two-parameter Poisson-Dirichlet process prior](#). *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*. RU, 2009, Vol. 71, No. 5, p. 993-1008.
33. Fuentes, R., **Mena, R.H.** and Walker, S.G. [A nonparametric dependent process for Bayesian regression](#). *Statistics & Probability Letters*. Holanda, 2009, Vol. 79, No. 8, p. 1112-1119.
34. **Mena, R.H.** and Walker, S.G. [On a construction of Markov models in continuous time](#). *METRON-International Journal of Statistics*. Italia, 2009, Vol. 67, No. 3, p. 303-323.
35. Contreras, E., Rojas, J.A., Izazola, C., Delgadillo, H.J., Saldaña, Y., Barbarilla, C., Mendoza, N. and **Méndez, I.** [Testing a test: analysis of the consistency of a pharmacology exam](#). *Proceedings Western Pharmacology Society*. EUA, 2009, Vol. 52, p. 115-117.

36. Olvera, Y., **Méndez, I.**, Sánchez, M.E., Márquez, J., Barradas, V.L., Huante, P. and Orozeo, A. [Effect of environmental heterogeneity on field germination of *Opuntia tomentosa* \(Cactaceae, Opuntioideae\) seeds.](#) *Journal of Arid Environments*. RU, 2009, Vol. 73, No. 4-5, p. 414-420.
37. Romero, G., Dora Granados, D. y **Méndez, I.** [P300 y nociones elementales del número natural y de la lengua escrita en preescolares y escolares con antecedentes de encefalopatía neonatal.](#) *Archivo de Neurociencias*. México, 2009, Vol. 14, No. 2, p. 102-110.
38. Sánchez, L., Sáenz, E., Irigoyen, M., Zepeda, E., Acosta, A. and **Méndez, I.** [Stimulated saliva flow rate patterns in children: A six-year longitudinal study.](#) *Archives of Oral Biology*. RU, 2009, Vol. 54, No. 10, p. 970-975.
39. **Minzoni, A.A.**, Juárez, L.R. and Rosenbaum, M. [Lattice vortices induced by noncommutativity.](#) *Physics Letters A: General, Atomic and Solid State Physics*. Holanda, 2009, Vol. 373, No. 17, p. 1510-1513.
40. **Minzoni, A.A.**, Smyth, N.F., Xu, Z. and Kivshar, Y.S. [Stabilization of vortex-soliton beams in nematic liquid crystals.](#) *Physical Review A (Atomic, Molecular and Optical Physics)*. EUA, 2009, Vol. 79, No. 6, Art. 063808, 7 p.
41. Assato, G., Cisneros, L.A., **Minzoni, A.A.** and Smyth, N.F. [Light self-localization in nematic liquid crystals: modeling solitons in nonlocal reorientational media.](#) *Journal of Nonlinear Optical Physics and Materials*. Singapur, 2009, Vol. 18, No. 4, p. 657-691.
42. Assato, G., **Minzoni, A.A.**, Peccianti, M. and Smyth, N.F. [Optical solitary waves escaping a wide trapping potential in nematic liquid crystals: modulation theory.](#) *Physical Review A (Atomic, Molecular and Optical Physics)*. EUA, 2009, Vol. 79, No. 3, Art. 033837, 5 p.
43. Xu, Z., Smyth, N.F., **Minzoni, A.A.** and Kivshar, Y.S. [Vector vortex solitons in nematic liquid crystals.](#) *Optics Letters*. EUA, 2009, Vol. 34, No. 9, p. 1414-1416.
44. **Morales, L.B.** [Constructing I-rotational NRDFs through an optimization approach: new \(46,9,8\), \(51,10,9\) and \(55,9,8\)-NRBDs.](#) *Journal of Statistical Planning and Inference*. Holanda, 2009, Vol. 139, No. 1, p. 62-68.
45. Abel, R.J.R., Finizio, N.J., Greig, M. and **Morales, L.B.** [Existence of \(2,8\) GWhD\(\$v\$ \) and \(4,8\) GWhD\(\$v\$ \) with \$v \equiv 0, 1 \pmod{8}\$.](#) *Designs, Codes and Cryptography*. EUA, 2009, Vol. 51, No. 1, p. 79-97.
46. Lockhart, R.A., **O'Reilly, F.** and Stephens, M.A. [Exact conditional tests and approximate bootstrap tests for the von Mises distribution.](#) *Journal of Statistical Theory and Practice*. EUA, 2009, Vol. 3, No. 3, p. 543-554.
47. **Oropeza, L.A.**, Burgner, C.B. and Turner, K.L. [Robust micro-rate sensor actuated by parametric resonance.](#) *Sensors and Actuators A: Physical*. Suiza, 2009, Vol. 152, No. 1, p. 80-87.

48. **Panayotaros, P.** [Linear stability of breathers of the discrete NLS](#). *Physics Letters A: General, Atomic and Solid State Physics*. Holanda, 2009, Vol. 373, No. 10, p. 957-963.
49. **Sergiyenko, O., Hernández, W., Tyrsa, V., Devia, L.F., Starostenko, O. and Peña, M.** [Remote sensor for spatial measurements by using optical scanning](#). *Sensors*. Suiza, 2009, Vol. 9, No. 7, p. 5477-5492.
50. **Coria, S.R. and Pineda, L.A.** [An analysis of prosodic information for the recognition of dialogue acts in a multimodal corpus in Mexican Spanish](#). *Computer Speech and Language*. RU, 2009, Vol. 23, No. 3, p. 277-310.
51. **Lau, D., Pineda, L.A., Avilés, H.H., Gutiérrez, G., Farfán, B.E., Núñez, R., Bonder, A., Martínez, R., Corona, C., Olivera, M.A., Gutiérrez, M.C., Robles, G. and Kershenobich, D.** [Effective use of FibroTest to generate decision trees in hepatitis C](#). *World Journal of Gastroenterology*. China, 2009, Vol. 15, No. 21, p. 2617-2622.
52. **Corrado, L., Corrado, M., Nguyen, T., Plaza, R.G. and Zumbrun, K.** [Stability of scalar radiative shock profiles](#). *SIAM Journal on Mathematical Analysis*. EUA, 2009, Vol. 41, No. 6, p. 2165-2206.
53. **Arganis, M., Val, R., Prats, J., Rodríguez, K., Domínguez, R. and Dolz, J.** [Genetic programming and standardization in water temperature modelling](#). *Advances in Civil Engineering*. RU, 2009, Art. ID 353960, 10 p.
54. **Arenas, E.D., Ochoterena, H. and Rodríguez, K.** [Multiple sequence alignment using a genetic algorithm and GLOCSA](#). *Journal of Artificial Evolution and Applications*. RU, 2009, Art. ID 963150, 10 p.
55. **Carrillo, M. and Rosenblueth, D.A.** [A method for CTL model update, representing Kripke structures as “table systems”](#). *International Journal of Pure and Applied Mathematics-IJPAM*. Bulgaria, 2009, Vol. 52, No. 3, p. 401-431.
56. **Rosenblueth, J.F.** [Augmentability in optimal control](#). *International Journal of Mathematics and Statistics*. India, 2009, Vol. 5, No. A09, p. 102-109.
57. **Rosenblueth, J.F.** [Equality-inequality mixed constraints in optimal control](#). *International Journal of Mathematical Analysis*. Bulgaria, 2009, Vol. 3, No. 28, p. 1369-1387.
58. **Bedolla, D., Gil Tejeda, J. y Ruiz, A.A.** [El ARS en el estudio y evaluación de metodología para el diseño de productos industriales: aplicación y perspectiva](#). *Revista Redes*. España, 2009, Vol. 17, No. 9, p. 195-209.
59. **Gil Tejeda, J., Bedolla, D. y Ruiz, A.A.** [Redes dinámicas neo-artesanales. Aplicaciones de la teoría de redes sociales para el estudio del arte popular en México](#). *Revista Redes*. España, 2009, Vol. 17, No. 10, p. 210-234.

60. Marquina, M.L. y **Ruiz, A.A.** Cooperación política trasnacional para la interoperabilidad de los negocios electrónicos. Revista Redes. España, 2009, Vol. 17, No. 5, p. 100-136.
61. Moreno, A., **Ruiz-Velasco, S.** and Medina-Mora, M.E. Association between smoking and minimal-mild depressive symptomatology in heavy smokers. Salud Mental. México, 2009, Vol. 32, No. 3, p. 199-204.
62. **Sabina, F.J.** and Movchan, A.B. Interfacial effects in electromagnetic coupling within piezoelectric phononic crystals. Acta Mechanica Sinica. Alemania, 2009, Vol. 25, No. 1, p. 95-99.
63. Bravo, J., Rodríguez, R., Quinovart, R., **Sabina, F.J.** Aguilar, A.R., Silva, U.P. and Gómez, J.L. Analytical formulae for electromechanical effective properties of 3–1 longitudinally porous piezoelectric materials. Acta Materialia. RU, 2009, Vol. 57, No. 3, p. 795-803.
64. Bravo, J., Rodríguez, R., Mechkar, H., Otero, J.A., Hernández, J., Lozano, M.S., Quinovart, R. and **Sabina, F.J.** Homogenization and effective properties of periodic thermomagnetoelastic composites. Journal of Mechanics of Materials and Structures. EUA, 2009, Vol. 4, No. 5, p. 819-836.
65. Brito, H., Rodríguez, R., Quinovart, R., Bravo, J., **Sabina, F.J.** and Maugin, G.A. Unified formulae of variational bounds for multiphase anisotropic elastic composites. Archive of Applied Mechanics. Alemania, 2009, Vol. 79, No. 3, p. 189-204.
66. Camacho, H., **Sabina, F.J.**, Bravo, J., Quinovart, R. and Rodríguez, R. Magnetoelectric coupling and cross-property connections in a square array of a binary composite. International Journal of Engineering Science. EUA, 2009, Vol. 47, No. 2, p. 294-312.
67. Cherednichenko, K.D. and **Sabina, F.J.** On the existence of waves guided by a cavity in an elastic film. Quarterly Journal of Mechanics and Applied Mathematics. EUA, 2009, Vol. 62, No. 3, p. 221-233.
68. Pérez, L.D., Bravo, J., Rodríguez, R. and **Sabina, F.J.** On the constitutive relations and energy potentials of linear thermo-mageto-electro-elasticity. Mechanics Research Communications. RU, 2009, Vol. 36, No. 3, p. 342-350.
69. Rodríguez, R., Quinovart, R., Bravo, J., **Sabina, F.J.**, Berger, H., Kari, S. and Gabbert, U. Variational bounds for anisotropic elastic multiphase composites with different shapes of inclusions. Archive of Applied Mechanics. Alemania, 2009, Vol. 79, No. 8, p. 695-708.
70. Valdiviezo, O.C., Levin, V.M. and **Sabina, F.J.** Dispersion and attenuation in thermoelastic multisize particulate composites. Archive of Applied Mechanics. Alemania, 2009, Vol. 79, No. 1, p. 51-67.
71. Vivar, J.M., Gabbert, U., Berger, H., Rodríguez, R., Bravo, J., Quinovart, R. and **Sabina, F.J.** A dispersive nonlocal model for wave propagation in periodic composites. Journal of Mechanics of Materials and Structures. EUA, 2009, Vol. 4, No. 5, p. 951-976.

72. Naboko, S., Pchelintseva, I. and **Silva, L.O.** [Discrete spectrum in a critical coupling case of Jacobi matrices with spectral phase transitions by uniform asymptotic analysis](#). *Journal of Approximation Theory*. EUA, 2009, Vol. 161, No. 1, p. 314-336.
73. **Uribe, G.** [The falling apart of the tagged fragment and the asymptotic disintegration of the Brownian height fragmentation](#). *Annales de l'Institut Henri Poincaré. Probabilités et Statistiques*. Francia, 2009, Vol. 45, No. 4, p. 1130-1149.
74. Caballero, M.A., Lambert, A. and **Uribe, G.** [Proof\(s\) of the Lamperti representation of continuous-state branching processes](#). *Probability Surveys*. EUA, 2009, Vol. 6, p. 62-89.
75. Dobrokhotov, S.Yu., Tirozzi, B. and **Vargas, C.A.** [Behavior near the focal points of asymptotic solutions to the Cauchy problem for the linerized shallow water equations with initial localized perturbations](#). *Russian Journal of Mathematical Physics*. Rusia, 2009, Vol. 16, No. 2, p. 201-220.
76. Bazán, I., **Vázquez, M.**, Ramos, A., Vera, A. and Leija, L. [A performance analysis of echographic ultrasonic techniques for noninvasive temperature estimation in hyperthermia range using phantoms with scatterers](#). *Ultrasonics*. Holanda, 2009, Vol. 49, No. 3, p. 358-376.
77. Ballesteros, M. and **Weder, R.** [The Aharonov–Bohm effet and Tonomura *et al.* experiments: rigorous results](#). *Journal of Mathematical Physics*. EUA, 2009, Vol. 50, No. 122108, 54 p.