

Publicaciones

Centro de Física Aplicada y Tecnología Avanzada de la UNAM
(Informe de Actividades 2010-2011)

Dr. José Luis Aragón Vera

Solving some quadratic Diophantine equations with Clifford algebra

G. Aragón-González, J.L. Aragón, M.A. Rodríguez-Andrade
[Adv. Appl. Clifford Alg.](#) **21** (2011) 259-272.

Pythagorean vectors and Clifford numbers

G. Aragón-González, J.L. Aragón, M.A. Rodríguez-Andrade
[Adv. Appl. Clifford Alg.](#) **21** (2011) 247-258.

An algorithm for the Cartan-Dieudonné theorem on generalized scalar product spaces

M.A. Rodríguez-Andrade, G. Aragón-González, J.L. Aragón, L. Verde-Star
[Linear Algebra Appl.](#) **434** (2011) 1238-1254.
[arXiv: 1011.1027](#)

Coincidence lattices in the hyperbolic plane

M.A. Rodríguez-Andrade, G. Aragón-González, J.L. Aragón, A. Gómez-Rodríguez
[Acta Cryst. A](#) **67** (2011) 35-44.

Analysis of stationary droplets in a generic Turing reaction-diffusion system

Thomas E. Wooley, Ruth E. Baker, Philip K. Maini, José Luis Aragón, R.A. Barrio
[Phys. Rev. E](#) **74** (2010). [Art. No. 051929.](#)

Reflections, rotations and Pythagorean numbers

G. Aragón-González, J.L. Aragón, M.A. Rodríguez-Andrade and L. Verde-Star
[Adv. Appl. Clifford Algebras](#) **19** (2009) 1-14

Eutacticity in sea urchin evolution

J. López-Sauceda, J.L. Aragón
[Bull. Math. Biol.](#) **70** (2008) 625-634.
[arXiv: 0708.1256](#)

Turbulent luminance in impassioned van Gogh paintings

J.L. Aragón, Gerardo G. Naumis, M. Bai, M. Torres, P.K. Maini
[J. Math. Imaging Vis.](#) **30** (2008) 275-283.
[arXiv: physics/0606246](#)

Artículo reseñado en:

[Nature News, July 7 \(2006\)](#). Van Gogh painted perfect turbulence.

[The Times, July 15 \(2006\)](#). Illness helped Van Gogh to capture the perfect storm.

[Discover, October \(2006\)](#). A turbulent mind.

[New Scientist, Issue 2560 \(2006\)](#). Van Gogh had turbulence down to a fine art.

[Plus Magazine, July 21 \(2006\)](#). Troubled minds and perfect turbulence.

[Photonics Spectra, October \(2006\)](#). Turbulent art.

[Wissenschaft, November 7 \(2006\)](#). Van Goghs gemalte Wirbel gehorchen den Gesetzen der Physik.

[Scienza Esperienza, July 10 \(2006\)](#). Spirali matematicamente perfette nei quadri di Van Gogh.

[El País \(España\), 19 de julio \(2006\)](#). Los óleos turbulentos de van Gogh.

[La Crónica \(México\), 8 de agosto \(2006\)](#). Van Gogh anticipó las turbulencias.

[Hürriyet \(Turquía\), 19 de agosto \(2006\)](#). Van Gogh'un ustalıklı sanatı çalkantılı kişiliğini yansıttı.

Reflectance distribution in optimal transmittance cavities: The remains of a higher dimensional space

Gerardo G. Naumis, A. Bazán, M. Torres, J.L. Aragón, R. Quintero-Torres
[Physica B](#) **403** (2008) 3179-3184.

Oscilaciones, armonía y simpatía

R. Quintero-Torres, M.A. Ocampo, B. Millán, J.L. Aragón, Gerardo G. Naumis
Rev. Mex. Fis. E ,53 (1)(2007) 67-81
PDF

Eutactic star closest to a given star

A. Gómez-Rodríguez, M. Torres and J.L. Aragón
J. Math. Phys. ,48(2007) 053506-1-6

Conformal mapping of ultrasonic crystals: confining ultrasound and cholesteric-like wave guiding

A. Bazán, M. Torres, F.R. Montero de Espinosa, R. Quintero-Torres and J.L. Aragón
Appl. Phys. Lett. ,90(2007) 094101-1-3
arXiv: physics/0701298

Strong far field coherent scattering of ultraviolet radiation by holococcolithophores

R. Quintero-Torres, J.L. Aragón, M. Torres, M. Estrada, L. Cros.
Phys. Rev. E ,74(2006) 032901-1-4

Artículo reseñado en:

Physical Review Focus, September 20 (2006). Ingenious Algae.

Quasiperiodic states in linear surface wave experiments

M. Torres, J.P. Adrados, P. Cobo, A. Fernández, G. Chiappe, E. Louis, J.A. Miralles, J.A. Vergés and J.L. Aragón.
Philos. Mag. ,86(2006) 1065-1073

The decomposition of an orthogonal transformation as a product of reflections

G. Aragón-González, J.L. Aragón, M.A. Rodríguez-Andrade.
J. Math. Phys. ,47(2006) 013509-1-10

Quasicrystalline and rational approximant wave patterns in hydrodynamic and quantum nested wells

A. Bazán, M. Torres, G. Chiappe, E. Louis, J.A. Miralles, J.A. Vergés, Gerardo G. Naumis, J.L. Aragón.
Phys. Rev. Lett. ,97(2006) 124501-1-4
arXiv: physics/0607006

Simplified dynamic model for the motility of irregular echinoids

J.L. Aragón, A. Gómez-Rodríguez, M. Torres
Phys. Rev. E ,72(2005) 041925-1-5

Artículo seleccionado para el número del 1 de noviembre del 2005 del Virtual Journal of Biological Physics Research, de la American Physical Society y el American Institute of Physics.

Clifford algebra approach to the coincidence problem for planar lattices

M.A. Rodríguez, J.L. Aragón and L. Verde-Star
Acta Crystallogr. A ,61(2005) 173-184

Phason coherency in real space

Gerardo G. Naumis and J.L. Aragón
Ferroelectrics ,305(2004) 199-202

Polyhedral truncations as eutactic transformations

M. Torres, J.L. Aragón and A. Gómez-Rodríguez
Acta Cryst. A ,60(2004) 311-314

Self-reciprocal redundant vector stars

A. Gómez-Rodríguez, J.L. Aragón and M. Torres
Z. Kristallogr. ,219(2004) 677-679

Quasiperiodic Bloch-like states in a surface-wave experiment

M. Torres, Juan P. Adrados, J.L. Aragón, P. Cobo and S. Tehuacanero
Phys. Rev. Lett. ,90(2003) 114501-1-4

Artículo reseñado en:

Physical Review Focus, March 17 (2003). Catch a Quasiperiodic Wave.
Physics Central. Catch a Quasiperiodic Wave.
Le Scienze. Onde quasiperiodiche.

Analytic expressions for the vertex coordinates of quasiperiodic lattices

Gerardo G. Naumis and J.L. Aragón
Z. Kristallogr. ,218(2003) 397-420

Regularity in irregular echinoids

M. Torres, J.L. Aragón, P. Domínguez and D. Gil
J. Math. Biol. ,44(2002) 330-340

A multigrid approach to the average lattices of quasicrystals

J.L. Aragón, Gerardo G. Naumis and M. Torres
Acta Cryst. A ,58(2002) 352-360

Size dependent symmetry breaking in models for morphogenesis

R. A. Barrio, P.K. Maini, J.L. Aragón and M. Torres
Physica D ,168(2002) 61-72

Average lattices and the long-wave behaviour of quasicrystals

Gerardo G. Naumis, J.L. Aragón and M. Torres
J. Alloy. Compd. ,342(2002) 210-212

Turing patterns with pentagonal symmetry

J.L. Aragón, M. Torres, D. Gil, R.A. Barrio and P.K. Maini
Phys. Rev. E ,65(2002) 051913-1-9

Artículo seleccionado para Volumen 3, Número 10 (2000) del Virtual Journal of Biological Physics Research, de la American Physical Society y el American Institute of Physics.

Modern geometric calculations in crystallography

G. Aragón, J.L. Aragón, F. Dávila, A. Gómez and M.A. Rodríguez
Geometric Algebra with Applications in Science and Engineering. ,edited by E. Bayro-Corrochano and G. Sobczyk.(2001) 371-386

Ultrasonic wedges for elastic wave bending and splitting without requiring a full band gap

M. Torres, F.R. Montero de Espinosa and J.L. Aragón
Phys. Rev. Lett. ,86(2001) 4282-4285

Artículo reseñado en:

Physics News Update, 536 #1, April 27 (2001). Ultrasonic Bang Gap Materials.
ScienceNow, May 15 (2001). Sound Waves Take a Detour.
InSight, May 15 (2001). Sound Waves Take a Detour.
Technology Research News Magazine, June 6 (2001). Material Bends Sound Waves.
Spektrum der Wissenschaft, May 17 (2001). Akustischer Wellenbrecher.

Crecimiento estocástico de sólidos

R. Paredes, J.L. Aragón and R.A. Barrio
Rev. Mex. Fís. ,45(1999) 21-24

Formación de patrones en sistemas biológicos

C. Varea, J.L. Aragón and R.A. Barrio
TIP (Ciencias Químico-Biológicas) ,2(1999) 59-68

A two-dimensional numerical study of spatial pattern formation in interacting Turing systems

R.A. Barrio, C. Varea, J.L. Aragón and P.K. Maini
Bull. Math. Biol. ,61(1999) 483-505

Incluido en el Top Ten de los artículos más citados del Bulletin of Mathematical Biology desde 1999.

Detailed atomic structure of arbitrary fcc [100] twist grain boundaries

D. Romeu, L. Beltrán, J.L. Aragón and A. Gómez
Phys. Rev. B ,59(1999) 5134-5141

Turing patterns on a sphere

C. Varea, J.L. Aragón and R.A. Barrio
Phys. Rev. E ,60(1999) 4588-4592

Spatial Patterning in Modified Turing Systems: Application to Pigmentation Patterns on Marine Fish

J.L. Aragón, C. Varea and R.A. Barrio
FORMA ,13(1998) 213-221

Artículo de portada

Aspectos Físicos y Matemáticos del Método del Elemento Finito

G. Aragón and J.L. Aragón
Rev. Mex. Fís. ,44(1998) 290-302

Non-periodic hexagonal square-triangle tilings

R. Paredes, J.L. Aragón and R.A. Barrio
Phys. Rev. B ,58(1998) 11990-11995

The Influence of Phason Disorder on the Electronic Spectrum and Eigenstates of Fibonacci Lattices

Gerardo G. Naumis and J.L. Aragón
Phys. Lett. A ,244(1998) 133-138

A Generalized Coincidence-Site Network model for grain boundaries

A. Gómez, L. Beltrán, J.L. Aragón and D. Romeu
Scr. Materialia ,38(1998) 795-801

Clifford algebras and geometric algebra

G. Aragón, J.L. Aragón and M.A. Rodríguez
Adv. Appl. Clifford Algebras ,7(1997) 91-102

Grain boundaries as projections from higher-dimensional lattices

J.L. Aragón, D. Romeu, L. Beltrán and A. Gómez
Acta Cryst. A ,53(1997) 772-780

Confined Turing patterns in growing systems

C. Varea, J.L. Aragón and R. A. Barrio
Phys. Rev. E ,56(1997) 1250-1253

Robust symmetric patterns in the Faraday experiment

R.A. Barrio, J.L. Aragón, C. Varea, M. Torres, I. Jiménez and F. Montero de Espinosa
Phys. Rev. E ,56(1997) 4222-4230

Hydrodynamic 5-fold Diffusion-driven Instabilities

R.A. Barrio, J.L. Aragón, C. Varea, M. Torres and F. Montero de Espinosa.
Nonlinear Anal. Theor. ,30(1997) 3339-3344

Substitutional disorder in a Fibonacci chain: Resonant eigenstates and instability of the spectrum

Gerardo G. Naumis and J.L. Aragón
Phys. Rev. B ,54(1996) 15079-15085

Prediction of the external shape of ideal icosahedral quasicrystals

J.L. Aragón, F. Dávila and A. Gómez
Phys. Rev. B ,51(1995) 857-863

La estructura atómica de los cuasicristales

J.L. Aragón
Rev. Mex. Fís ,40(1994) 339-365

Geometric and physical properties of periodic and aperiodic graphitic structures

H. Terrones, J. Fayos and J.L. Aragón
Acta Mater. ,42(1994) 2687-2699

Transition from multiply twinned icosahedral to cuboctahedral

J.L. Aragón
Chem. Phys. Lett. ,226(1994) 263-267

The observation of quasimelting at the atomic level in Au nanoclusters

W. Krakow, M. José-Yacamán and J.L. Aragón
Phys. Rev. B ,49(1994) 10591-10596

The atomic structure of the decagonal phase and its approximants as random coincidence networks

D. Romeu, J.L. Aragón, M. Torres and J.L. Verger-Gaugry
J. Phys. Condens. Mat. ,5(1993) 7785-7796

Three-dimensional decagonal structure for AlCuCo alloys as random coincidence networks with Fibonacci spaced lines

D. Romeu, J.L. Aragón, G. Pastor and M. Torres
J. Non-Cryst. Solids ,153&154(1993) 237-242

Renormalization group of random Fibonacci chains

J.C. López, G. Naumis and J.L. Aragón
Phys. Rev. B ,48(1993) 12459-12464

Model for icosahedral aperiodic graphite foams

J.L. Aragón, H. Terrones and D. Romeu
Phys. Rev. B ,48(1993) 8409-8411

Approximation to the study of quasicrystal-crystal transitions

M. Torres, J.L. Aragón, D. Romeu, I. Jiménez, E. Velázquez and G. Pastor
J. Non-Cryst. Solids ,153&154(1993) 268-271

Recursive growth of the AlCuLi icosahedral and crystalline phases

J. L. Aragón, D. Romeu, M. Torres and J. Fayos
J. Non-Cryst. Solids ,153&154(1993) 525-529

Configurational entropy of rational approximants of a decagonal quasilattice in a pure phason approach

M. Torres, G. Pastor, I. Jiménez, J.L. Aragón and D. Romeu
Scripta Mater. ,27(1992) 83-88

Non-isometric hyperlattices suitability to describe the approximant phases of the decagonal phase

M. Torres, J.L. Aragón, I. Jiménez, E. Velázquez and G. Pastor
Europhys. Lett. ,18(1992) 601-605

Higher dimensional approach to a unified growth model for crystals, quasicrystals and multiply twinned particles

J.L. Aragón, D. Romeu and A. Gómez
Phys. Rev. B ,44(1991) 584-592

A geometrical approach to icosahedral displacive phase transitions

J.L. Aragón and M. Torres
Europhys. Lett. ,15(1991) 203-208

Displacive rational approximants of quasilattices

M. Torres, J.L. Aragón and G. Pastor
Scripta Mater. ,25(1991) 1123-1128

Quasicrystals that project from non-isometric lattices: A generalization of a theorem by Hadwiger

A. Gómez, J.L. Aragón and F. Dávila
J. Phys. A: Math. Gen. ,24(1991) 493-500

Quasicrystal-Crystal transition in the dodecagonal phase

J.L. Aragón, J. Reyes-Gasga, M. José-Yacamán, M. Torres and G. Pastor
Phil. Mag. Letters ,62(1990) 337-347

Displacive transformations for the octagonal and dodecagonal phases

M. Torres, G. Pastor, I. Jimenez, J.L. Aragón and M. José-Yacamán
Phil. Mag. Letters ,62(1990) 349-355

Unambiguous indexing of quasicrystals. Vector star selection

J.L. Aragón, D. Romeu, A. Gómez and F. Dávila
Scripta Mater. ,24(1990) 719-722

Unambiguous indexing of icosahedral and decagonal phase quasicrystals

J.L. Aragón, A. Gómez and D.Romeu
Scripta Mater. ,24(1990) 723-727

A general algorithm for the generation of quasilattices by means of the cut and projection method using the simplexmethod of linear programming and the Moore-Penrose generalized inverse

J.L. Aragón, G. Vázquez Polo and A. Gómez
Int. J. Mod. Phys. B ,3(1989) 773-786