Curriculum Vitae

Profesor Miguel Ortuño Ortín

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Datos personales

Nacimiento 2 Novembre 1953, Yecla (Murcia) Spain.
Estado civil: casado; un hijo y una hija.

Educación

- Licenciado en Física: 1975, Universidad Autónoma de Madrid.
- Doctorado: 1980, Cavendish Laboratory, University of Cambridge
- Doctorado: 1982, Ciencias (Físicas), Universidad Autónoma de Barcelona

Puestos desempeñados

1987- : Catedrático, Universidad de Murcia
1985-87: Adjunto, Universidad de Murcia
1982-84: Adjunto, Universidad Autónoma de Barcelona
Sep 82-Oct 82: Investigador Postdoctoral, University of Cambridge (Cavendish Laboratory)
Mar 81-Aug 82: Investigador Postdoctoral, University of California in Riverside, USA
Nov 80-Feb 81: Investigador Postdoctoral, University of Lund, Sweden
1977-80: Ayudante de investigación, University of Cambridge (Cavendish Laboratory)
1975-77: Ayudante de investigación y docencia, Universidad Autónoma de Barcelona

Académico de Número de la Academia de Ciencias de la Región de Murcia

Líneas de investigación

Electron glass; interacting systems; many-body localization; loops models; deconfined quantum criticality; quantum information, spin quantum Hall effect; mesoscopic physics; transport in disordered systems; relaxation; non linear effects; metal-insulator transitions; tunneling time.

Docencia en la Universidad de Murcia

- "Física Cuántica" tercer curso de la licenciatura/grado de Física (2004-2013).
- "Simulación Avanzada" curso de máster (2009-2013).

- "Física para las ciencias de la Vida" primer curso licenciatura de Veterinaria (1988-2004).
- Organizador del examen de Físisa de las P.A.U. (1993-2003).

Estudiantes de Doctorado

Javier Abellán García; Rafael Chicón Romero; Emilio Cuevas Rodríguez; Pedro Carpena Sánchez; Antonio Pérez Garrido; Anastasio Díaz Sánchez; José Damián Catalá Galindo; Javier Prior Arce; Oscar del Barco Novillo; Manuel Pino Garcia; Pablo Serna Martínez.

Gestión de la Investigación

2011-2015: **Gestor del Programa on Física del Plan Nacional**.

Representante español en el Review Pannel of the Euroquam program of the European Science Foundation.

Organización de Conferencias Internacionales

2010 Coordinator of the Conference "Out of equilibrium quentum systems", Santa Barbara.

2010 Scientific Advisor KITP program on Electron Glasses.

2007 Cochairman of the 3rd European Conference on the "Fundamental problems of mesoscopic physics and nanoelectronics", Mojacar, Spain.

2005 Member of the Organising Committee of European Research Conference on "Fundamental problems of mesoscopic physics: Entanglement and coherence in nanoelectronics", Aquafredda di Maratea, Italy.

2003 Member of the Organising Committee of European Research Conference on "Interactions and decoherence in Mesoscopic Physics", Granada, Spain.

2001 Member of Internacional Advisory Committee, Hopping and Related Phenomena IX, Shefayim.

1999 Chairman, Hopping and Related Phenomena VIII, Murcia, Spain.

1997 Member of Internacional Advisory Committee, Hopping and Related Phenomena: VII, Ráckeve; VI, Jerusalem (1995); V, Glasgow (1993); IV, Marburg (1991).

1994 Chairman, 4th Workshop Science Project Localization and transport fluctuations in microstructures, Murcia.

Proyectos, Becas y Premios

2013 DGI 3-year research grant "Conductancia, relajación y transiciones de fase en sistemas interactuantes".

2010 DGI 3-year research grant "Sistemas cuánticos desordenados".

2009 Fundación Séneca 2-year research grant.

2007 Principal Investigator (**PI**): DGI 3-year research grant "Localización e interacciones en sistemas electrónicos y qubits".

2004 **PI**: DGICYT 3-year research grant "Conducción en sistemas mesoscópicos: efecto de las interacciones".

2001 **PI**: DGICYT 3-year research grant "Fenómenos críticos y transporte en sistemas desordenados e interactuantes".

2000 FEDER 2-year research grant "Transporte y efectos colectivos en sistemas mesoscópicos y en sistemas complejos".

1999 **PI**: Fundación Séneca 1-year research grant.

1998 **PI**: DGICYT 3-year research grant "Sistemas mesoscópicos interactuantes y frenado de moléculas en sólidos".

1996 **PI**: research grant "Numerical simulations of the Coulomb glass" for exchange visits with Dr. Arnulf Moebius.

1995 INTAS 3-year research grant "Metal-insulator transition and quantum (hopping) transport in disordered systems". PI: Prof. G. Biskupski.

1995 **PI**: NATO grant "Traversal time and transport in mesoscopic systems" for a visit of Prof. Vladimir Gasparian

1995 **PI**: DGICYT 3-year research grant "Materiales desordenados: propiedades de transporte, interacciones y poder de frenado".

1993 **PI**: DGICYT grant for a one-year visit of Prof. Vladimir Gasparian.

1992 **PI**: DGICYT 3-year research grant "Interacciones y propiedades elásticas en materiales desordenados".

1991 EEC 3-year network grant "Localization and transport fluctuations in microstructures". PI: Prof. Bernard Kramer.

1991 **PI**: Comunidad Autónoma de Murcia one-year research grant "Interacción y percolación en materiales desordenados".

1989 British Council `Academic link' with Rutherford Appleton Laboratory for excahnge visits with Dr. J.M.F. Gunn

1989 **PI**: DGICYT 3-year research grant "Interacciones en sistemas desordenados".

1986 Research grant "`Percolation' in a random environment" for excahnge visits with Dr. J.M.F. Gunn.

1985 Comité Conjunto **USA-Spain** 3-year research grant "Coulomb interactions in disordered systems". PI: Prof. Michael Pollak.

1985 Science and Engineering Research Council Grant (UK), 1 month.

1984 Generalidad de Catalunya, CIRIT, Grant, 2 months.

1983 `Grant-in-aid' of the British Council, 2 months.

1980 Ministerio de Universidades e Investigación Grant, 2 years.

1979 British Council Scholarship, 1 year.

1979 Prize ``Juan de la Cierva" of Scientific Research.

1978 Patronato "Angel García Rogel" Scholarship, 1 year.

1975 Ministerio de Educación y Ciencia Grant, 3 years.

1975 IBM Studentship, 3 months.

Libros

1. M. Pollak, M. Ortuño and A. Frydman,
The Electron Glass,
Cambridge University Press, Cambridge (2013).

2. M. Pollak and M. Ortuño,
"The effect of Coulomb Interactions on Electronic States and Transport in Disordered Insulators",
Electron-electron Interactions in Disordered Systems. Eds. A. L. Efros and M. Pollak, North-Holland Holanda, 287-408 (1985).

Lista de Publicaciones

1. M. Pino, M. Ortuño, A. M. Somoza and J. Prior
"Locating the Many-Body transition via the von Neumann entropy"
AIP Conference Proceedings **1610**, 97 (2014);

2. A. Nahum, J. T. Chalker, P. Serna, M. Ortuño and A. M. Somoza
"Phase transitions in three-dimensional loop models and the CP^{n-1} sigma model",
Phys. Rev. B **88**, 134411 (2013).

3. A. Nahum, J. T. Chalker, P. Serna, M. Ortuño and A. M. Somoza
"Length distributions in loop soups"
Phys. Rev. Lett. **111**, No. 10, 100601 (2013).

4. A. Nahum, J. T. Chalker, P. Serna, A. M. Somoza and M. Ortuño
"Loop models with crossings",
Phys. Rev. B **87**, No. 18, 184204 (2013).

5. M. Pino, A. M. Somoza and M. Ortuño
"Quantum Coulomb gap",
Phys. Rev. B **86**, No.9, 094202 (2012).

6. M. Ortuño and A. M. Somoza,
"Numerical studies of relaxation in Electron Glasses"
Journal of Physics: Conference Series **376**, 012007 (2012).

7. M. Pino, A. M. Somoza and M. Ortuño
"Quantum Coulomb gap",
Journal of Physics: Conference Series **376**, 012006 (2012).

8. O. del Barco and M. Ortuño,
"Localization length of nearly periodic layered metamaterials",
Phys. Rev. A **86**, No. 2, 023846 (2012).

9. J. Bergli, A. M. Somoza and M. Ortuño, "Effects of many-electron jumps in relaxation and conductivity of Coulomb glasses", ***Phys. Rev. B*** **84**, No.17, 174201 (2011).

10. A. Nahum, J. T. Chalker, P. Serna, M. Ortuño and A. M. Somoza, "Spin quantum Hall effect and plateau transitions in multilayer network models", ***Phys. Rev. Lett.*** **107**, 110601 (2011).

11. J. T. Chalker, M. Ortuño and A. M. Somoza, "Spin quantum Hall effect and plateau transitions in multilayer network models", ***Phys. Rev. B*** **83**, No 11, 115317 (2011).

12. M. Ortuño, A. M. Somoza, V. V. Mkhitaryan, and M. E. Raikh, "Phase diagram of weak-magnetic-field quantum Hall transition quantified from classical percolation", ***Phys. Rev. B*** , accept. (2011).

13. M. Caravaca, A. M. Somoza and M. Ortuño, "Non-linear conductivity of two-dimensional Coulomb glasses", ***Phys. Rev. B*** **82**, No. 13, 134204 (2010).

14. O. del Barco and M. Ortuño, "Slow-light transmission in one-dimensional periodic structures", ***Phys. Rev. A*** **81**, No. 2, 023833 (2010).

15. D.L. Maslov, V.I. Yudson, A. M. Somoza and M. Ortuño, "Delocalization by disorder in layered systems", ***Phys. Rev. Lett.*** **102**, 216601 (2009). Selected for *Virtual Journal of Nanoscale Science and Technology* **19**, 24 (2009).

16. M. Ortuño, A. M. Somoza and J. T. Chalker, "Random Walks and Anderson Localisation in a Three-Dimensional Class C Network Model", ***Phys. Rev. Lett.*** **102**, 070603 (2009).

17. J. Prior, A. M. Somoza and M. Ortuño, "Conductance distribution in two-dimensional localized systems with and without magnetic fields", ***European Phys. J. B*** **70**, 513 – 521 (2009).

18. A. M. Somoza, J. Prior, M. Ortuño and I. V. Lerner, "Crossover from diffusive to strongly localized regime in two-dimensional systems", ***Phys. Rev. B*** **80**, 212201 (2009).

19. J. Bergli, A. M. Somoza and M. Ortuño, "Study of two-electron jumps in relaxation of Coulomb glasses", ***Ann. Phys. (Berlin)*** **18**, No. 12, 877 – 881 (2009).

20. M. Caravaca, A. Voje, J. Bergli, M. Ortuño and A. M. Somoza, "Non-linear conductivity in Coulomb glasses", ***Ann. Phys. (Berlin)*** **18**, No. 12, 873 – 876 (2009).

21. M. Caravaca, A. M. Somoza and M. Ortuño, "Effective temperature in Coulomb glasses", AIP Conf. Proc. **1091**, 182 – 184 (2009).

22. A. M. Somoza, M. Ortuño, M. Caravaca and M. Pollak, "Effective temperature in relaxation of Coulomb glasses", ***Phys. Rev. Lett.*** **101**, 056601 (2008).

23. T.C. Choy, A.M. Stoneham, M. Ortuño and A.M. Somoza, "Negative Magnetoresistance in ultrananocrystalline diamond:Strong or Weak localization?" ***Appl. Phys. Lett.*** **92,** 012120 (2008). Selected for *Virtual Journal of Nanoscale Science and Technology* **17**, 3 (2008).

24. M. Ortuño, M. Caravaca and A.M. Somoza, "Numerical Study of Relaxation in Coulomb Glasses", ***Phys. Stat. Sol. (c)*** **5**, No. 3, 674–679 (2008). **DOI** 10.1002/pssc.200777578.

25. A.M. Somoza, M. Ortuño and J. Prior, "Universal distribution functions in two-dimensional localized systems", ***Phys. Rev. Lett.*** **99**, 116602 (2007).

26. A.M. Somoza, J. Prior and M. Ortuño, "Conductance fluctuations in the localized regime: Numerical study in disordered noninteracting systems", ***Phys. Rev. B*** **73**, 184201 (2006).

27. J. Prior, A.M. Somoza and M. Ortuño, "Conductance fluctuations and corrections to the localization length in two-dimensional localized systems", ***Phys. Stat. Sol. (b)*** **243**, 395-398 (2006).

28. A.M. Somoza, M. Ortuño and M. Pollak, "Collective variable-range hopping in the Coulomb gap: Computer simulations", ***Phys. Rev. B*** **73**, 045123 (2006).

29. del Barco O, Ortuno M, Gasparian V, "Tunneling-time calculations for general finite wave packets based on the presence-time formalism", ***Phys. Rev. A*** **74**, 032104 (2006).

30. J. Prior, A.M. Somoza and M. Ortuño, "Conductance fluctuations and single-parameter scaling in two-dimensional disordered systems", ***Phys. Rev. B*** **72**, 024206 (2005).

31. A.M. Somoza, M. Ortuño and J. Prior, "Quantum fluctuations effects in hopping", ***Europhys. Lett.*** **70**, 649-655 (2005).

32. V. Gasparian, B. Altshuler and M. Ortuño, "Pumping in one dimensional Kronig-Penney models", ***Phys. Rev. B*** **72**, 195309 (2005). Selected in *Virtual Journal of Nanoscale Science and Technology* 12, 21 (2005).

33. A.M. Somoza and M. Ortuño, "Monte Carlo method for relaxation in electron glasses", ***Phys. Rev. B*** **72**, 224202 (2005).

34. M. Ortuño, A. M. Somoza and J. Prior, Conductance fluctuations in one- and two-dimensional localized systems, ***Phys. Stat. Sol. B***, **241**, 2148-2156 (2004).

35. J. Prior, A. M. Somoza and M. Ortuño, Quantum effects in Mott's variable range hopping, ***Phys. Stat. Sol. C***, **1**, 136-139 (2004).

36. A. M. Somoza, M. Ortuño and M. Pollak, Variable range hopping in the Coulomb gap, ***Phys. Stat. Sol. C***, **1**, 42-45 (2004).

37. J. Prior, M. Ortuño and A.M. Somoza, Variable-range hopping in one-dimensional systems, *Fundamental Problems in Mesoscopic Physics*, Eds. I.V. Lerner et al., p. 295-308 (Kluwer, Dordrecht, 2004).

38. V. Gasparian, M. Ortuño and O. Del Barco, Electronic traversal time in nanostructures, *Encyclopedia of Nanoscience and Nanotechnology,* **3**, p. 193-215 (American Scientific Publishers, 2003).

39. M. Pollak, A.M. Somoza and M. Ortuño, A percolation method for computing transport properties of the Coulomb glass, Proceedings 26th Intal Conference on the Physics of Semiconductors, D27 (IOP Publishing Limited 2003).

40. M. Ortuño, P. Carpena, P. Bernaola, E. Muñoz and A.M. Somoza, Keyword detection in natural languages and DNA, **Europhys. Lett., 57**, 759-764 (2002).

41. E. Cuevas, M. Ortuño, V. Gasparian and A. Pérez-Garrido, Fluctuations of the correlation dimension at metal-insulator transitions, **Phys. Rev. Lett., 88**, 016401 (2002).

42. V. Gasparian and M. Ortuño, Green function formulation of the traversal time and nature of the complex time, **Phil. Mag. B, 81**, 1191-1200 (2001).

43. M. Ortuño, J. Talamantes, E. Cuevas and A. Díaz-Sánchez, Coulomb interactions in Anderson insulators, **Phil. Mag. B, 81**, 1049-1064 (2001).

44. E. Cuevas, V. Gasparian and M. Ortuño, Anomalously large critical regions in power-law random matrix ensembles, **Phys. Rev. Lett., 87**, 056601 (2001).

45. A. Pérez-Garrido, M. Ortuño, A. M. Somoza and A. Díaz-Sánchez, Configuration space in electron glasses, **Phil. Mag. B, 81**, 151-162 (2001).

46. A. Díaz-Sánchez, A. Möbius, M. Ortuño, A. Neklioudov and M. Schreiber, Non-ergodic effects in the Coulomb Glass: specific heat, **Phys. Rev. B, 62**, 8030-8037 (2000).

47. M. Ortuño and E. Cuevas, Two interacting particles in a two-dimensional random potential, *Statistical and dynamical aspects of mesoscopic systems*, Springer-Verlag, 263-270 (2000).

48. A. Díaz-Sánchez, M. Ortuño, A. Pérez-Garrido and E. Cuevas, Phase transition in Coulomb glasses, **Phys. Stat. Sol. B, 218**, 11-15 (2000).,

49. A. Pérez-Garrido, M. Ortuño, A. M. Somoza and A. Díaz-Sánchez, Valleys in configuration space of Coulomb glasses, **Phys. Stat. Sol. B, 218**, 25 -29 (2000).

50. J.D. Catalá, J. Ruiz and M. Ortuño, Dynamic model with quenched rotational disorder in the hexagonal Lattice, **Phys. Stat. Sol. B, 218**, 247-250 (2000).

51. E. Cuevas and M. Ortuño, Delocalization transition for two interacting particles in a two-dimensional random potential, **Ann. Phys. (Leipzig), 8**, SI37-SI40 (1999).,

52. M. Ortuño and E. Cuevas, Localized to extended states transition for two interacting particles in a two-dimensional random potential, **Europhys. Lett., 46**, 224-230 (1999).

53. V. Gasparian, G. Schön, J. Ruiz and M. Ortuño, Kramers-Kronig relations and the barrier interaction time problem, **European Physical Journal B, 2**, 283-287 (1999).

54. A. Díaz-Sánchez, M. Ortuño, M. Pollak, A. Pérez-Garrido and A. Möbius, Dielectric susceptibility of the Coulomb Glass, **Phys. Rev. B, 59**, 910-914 (1999).

55. V. Gasparian, M. Ortuño, G. Schön and U. Simon, Tunneling time in nanostructures, *Handbook of Nanostructured Materials and Nanotechnology*, Academic Press, 513-569 (1999).

56. P. Carpena, V. Gasparian and M. Ortuño, Number of bound states of a Kronig-Penney finite-periodic superlattice, **European Physical Journal B, 8**, 635-641 (1999).

57. A. Pérez-Garrido, M. Ortuño, A. Díaz-Sánchez and E. Cuevas, Numerical study of relaxation in electron glasses, **Phys. Rev. B, 59**, 5328-5332 (1999).

58. E. Cuevas, M. Ortuño, J. Ruiz, E. Louis and J.A. Vergés, Transport regimes and critical energies in the two-dimensional Anderson model, **J. Phys.: Condensed Matter, 10**, 295-303 (1998).

59. V. Gasparian, G. Schön, J. Ruiz and M. Ortuño, On the application of the Kramers-Kronig relations to the interaction time problem, **Ann. Phys. (Leipzig), 7**, 756-763 (1998).

60. J.A. Vergés, E. Cuevas, M. Ortuño and E. Louis, Chaotic behavior induced by point contacts in quantum dots, **Phys. Rev. B (RC), 58**, R10143-R10146 (1998).

61. A. Díaz-Sánchez, A. Möbius, M. Ortuño, A. Pérez-Garrido and M. Schreiber, Coulomb glass simulations: Creation of a set of low-energy many-particle states, non-ergodic effects in the specific heat, **Phys. Stat. Sol. B, 205**, 17-19 (1998).

62. A. Pérez-Garrido, M. Ortuño and A. Díaz-Sánchez, Relaxation in Coulomb glasses at finite temperature, **Phys. Stat. Sol. B, 205**, 31-34 (1998).

63. A. Pérez-Garrido, M. Ortuño, E. Cuevas, J. Ruiz and M. Pollak, Conductivity of the Two-Dimensional Coulomb Glass, **Phys. Rev. B (RC), 55**, 8630-8633 (1997).

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66. P. Carpena, V. Gasparian and M. Ortuño, Finite periodic and quasiperiodic systems in an electric field, **Z. Phys. B, 102**, 425-431 (1997).

67. A. Pérez-Garrido, M. J. W. Dodgson, M. A. Moore, M. Ortuño and A. Díaz-Sánchez, Comment on "Possible Global Minimum Lattice Configurations for Thomson's Problem of Charges on a Sphere", **Phys. Rev. Lett., 79**, 1417-1417 (1997).

68. P. Carpena, V. Gasparian and M. Ortuño, The electronic spectrum of quantum delta-wells superlattices in an electric field, **Phys. Rev. B, 56**, 14929-14933 (1997).

69. E. Cuevas, E. Louis, J.A. Vergés and M. Ortuño, Quantum fluctuations in granular metals, **Physica B, 230-2**, 803-805 (1997).

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72. J.A. Vergés, E. Cuevas, E. Louis and M. Ortuño, Global quantum fluctuations in metallic particles, **Phys. Rev. B (RC), 56**, R7045-R7048 (1997).

73. E. Cuevas, E. Louis, M. Ortuño and J.A. Vergés, Energy fluctuations, Thouless energy, and conductance in the Anderson model in the ballistic and diffusive regimes, **Phys. Rev. B, 56**, 15853-15859 (1997).

74. V. Gasparian, M. Ortuño, E. Cuevas and J. Ruiz, Dwell time for an asymmetric one-dimensional barrier, **Solid St. Commun., 97**, 791-793 (1996).

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76. A. Pérez-Garrido, M. Ortuño, E. Cuevas and J. Ruiz, Many-particle jumps algorithm and Thomson's problem, **J. Phys. A: Math. Gen., 29**, 1973-1978 (1996).

77. E. Cuevas, V. Gasparian, M. Ortuño and J. Ruiz, Traversal time in periodically loaded waveguides, **Z. Phys. B, 100**, 595-599 (1996).

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81. J. Ruiz, M. Ortuño, E. Cuevas and V. Gasparian, Monte Carlo simulation of hopping conduction in two-dimensional Coulomb glasses, **J. Phys.: Condensed Matter, 7**, 639-644 (1995).

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84. M. Ortuño, J. Ruiz, E. Cuevas and A. Pérez-Garrido, Numerical simulations and conductivity of the Coulomb glass, *Hopping and related phenomena*, Racah Ins. Phys., 35-43 (1995).

85. A. Egea-Guillén, R. Garcia-Molina and M. Ortuño, Conductividad por saltos en redes uni-, bi- and tridimensionales desordenadas espacialmente, **Anales de Física, 91**, 45-48 (1995).

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87. J. Ruiz, E. Cuevas, M. Ortuño, J. Talamantes, M. Mochena and M. Pollak, Relaxation effects in the Coulomb glass, **J. Non-Cryst. Solids, 172-4**, 445-448 (1994).

88. M. Ortuño, E. Cuevas and J. Ruiz, Coulomb gap in granular metals, *Hopping and related phenomena 5*, World Scientific Publishing Co. Singapur, 299-303 (1994).

89. D. Espericueta, M. Ortuño and J. Talamantes, A comparison of algorithms to find the low-energy states of a Coulomb glass, *Hopping and related phenomena 5*, World Scientific Publishing Co. Singapur, 304-308 (1994).

90. M. Pollak, J. Ruiz, M. Ortuño and E. Cuevas, The activation energy of hopping conduction, *Hopping and related phenomena 5*, World Scientific Publishing Co. Singapur, 309-313 (1994).

91. M. Ortuño, M. Pollak and J. Talamantes, Low energy excitations and non-ergodicity in the Coulomb glass, **Intl. J. Modern Phys. B, 8**, 923-933 (1994).

92. A. Egea-Guillén, M. Ortuño and R. Garcia-Molina, Spatial disorder dependence of the conductance of a random resistor network, **Phys. Rev. B, 50**, 12520-12523 (1994).

93. E. Cuevas, M. Ortuño, J. Ruiz, V. Gasparian and M. Pollak, Electrode screening of the Coulomb gap, **Phil. Mag. B, 70**, 1231-1235 (1994).

94. I. Ortuño, M. Ortuño and J.A. Delgado, Neural networks for block decoding in the presence of channels with intersymbol interference, *Proc. Int. Conf. of Digital Signal Processing*, 1, 130-134 (1993).

95. J.D. Catalá, J. Ruiz and M. Ortuño, "Percolative" dynamics in the hexagonal lattice, **Z. Phys. B, 90**, 369-372 (1993).

96. E. Cuevas, M. Ortuño and J. Ruiz, Ground state of granular metals, **Phys. Rev. Lett., 71**, 1871-1874 (1993).

97. J. Ruiz, M. Ortuño and E. Cuevas, Correlations in two-dimensional Coulomb gaps, **Phys. Rev. B, 48**, 10777-10783(1993).

98. M. Mochena, M. Pollak, J. Ruiz and M. Ortuño, Energy and dielectric relaxation in the Coulomb gap, **Physica A, 201**, 178-182 (1993).

99. M. Ortuño and J. Ruiz, Simulation studies of variable range hopping in the coulomb gap, **Phil. Mag. B, 65**, 647-650 (1992).

100. I. Ortuño, M. Ortuño and J.A. Delgado, Error correcting neural networks for channels with gaussian noise, *Proceedings IEEE, IJCNN'92*, 4, 295-300 (1992).

101. M. Ortuño, J. Ruiz and J.M.F. Gunn, New universality classes in `percolative' dynamics, **J. Stat. Physics, 65**, 453-467 (1991).

102. I. Ortuño, M. Ortuño and J.A. Delgado, Neural networks as error correcting systems in digital communications, *Artificial Neural Networks*, Springer-Verlag, 409-414 (1991).

103. M. Ortuño and R. Chicón, Long-range interactions in systems with localised states, *Hopping and related phenomena*, World Scientific Publishing Co. Singapur, 125-132 (1990).

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