CURRICULUM VITAE

Mariana Weissmann

- Datos personales.

Apellido: Weissmann
Nombres: Mariana Dorotea
Nacionalidad: Argentina , nacida en Buenos Aires 1933
Dirección: Depto de Física, Comisión Nacional de Energía Atómica, Buenos Aires
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- Estudios realizados.

Secundarios: Bachiller, Liceo Nacional de Señoritas No.1, Buenos Aires
Universitarios: Física, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires.

- Títulos obtenidos.

Licenciada en Ciencias Fisicomatemáticas. 1957.
Doctor de la Universidad de Buenos Aires, Especialidad Física, 1965.

- Tesis.

Título: Estudio teórico de la unión hidrógeno y defectos iónicos en el hielo.
Realizada en: Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires.
Director de tesis: Dra. Norah Cohan.

- Carrera docente y de investigación.

Ayudante de Trabajos Prácticos, Dpto. de Física, UBA 1957-61.
Jefe de Trabajos Prácticos, Dpto. de Meteorología, UBA, 1963-65.
Profesora Adjunta, Dpto. de Meteorología, UBA, 1965-66.
Profesora visitante, Universidad de Oregon, USA, 1966-67.
Research Associate, Universidad de Siracuse, USA, 1967.
Encargada de Investigaciones, Universidad de Chile, 1968-71.
Profesora Asociada, Dpto. de Fisicoquímica, UBA, 1973-74
Profesora Asociada, Dpto. de Física, Univ. Simón Bolívar, Venezuela,1979-81.
Profesora Titular, Contratada, Dpto. de Física, UBA, 1989.
Profesora en Sabático, Dpto. Física de la Materia Condensada,
Univ. Autónoma de Madrid, España, 1990-91.
Investigador de Carrera de Conicet desde 1972 hasta la jubilación en 2006
Actualmente Investigador Consulto en la Comisión Nacional de Energía Atómica

- Carrera del Investigador Científico y Tecnológico.

Fecha de ingreso: Marzo de 1972.
Investigador Superior desde 1999 con lugar de trabajo en el Departamento de Física, Comisión Nacional de Energía Atómica., Buenos Aires.

- Sociedades Académicas de las cuales es miembro.

Asociación Física Argentina

American Physical Society
Senior Associate Member del ICTP, Trieste, Italia.
Academia Nacional de Ciencias Exactas, Físicas y Naturales, Buenos Aires.

- Organización de eventos científicos.

Coordinación del Noveno Simposio Latinoamericano de Física del Sólido. Mar del Plata, agosto 1985.

Premios recibidos

Premio L'Oreal-Unesco "For Women in Science" 2003

.- Formación y dirección de discípulos.

Dirección de Tesis: terminadas y aprobadas.

1985	Llois, Ana Maria	UBA	Tesis de doctorado
1989	Levy Yeyati, Alfredo	UBA	"
1990	Saul, Andrés	UBA	"
1994	Fabricius, Gabriel	UNLP	"
1995	Weht, Ruben	UBA	"
2001	Fu, Chu-Chun	UBA	"
1976	Efeyan,Carlos	UBA	Tesis de licenciatura
1978	Farengo, Ricardo	UBA	"
1983	Jauregui, Marcela	UBA	"
1983	Levy Yeyati, Alfredo	UBA	"
1986	Saul, Andrés	UBA	"
1990	Simonelli, Gabriela	UBA	"
1992	Errandonea, Daniel	UBA	"
2004	Bea , Edgar Alejandro	UNSAM	Maestria

- PUBLICACIONES totales en revistas con referato: mas de 100.

1. Electrostatic energies in ice and the formation of defects.
Trans.Far.Soc. 58 490 (62) with N. Cohan, M.Cotti and J.Iribarne.

2. Monte Carlo calculations on the cell cluster theory of fluids.
J.Chem.Phys. 37 2930 (62) with R.M.Mazo.

3. Nonspherically free volumes for hole theories of liquids.
J.Chem.Phys. 40 175 (64).

4. Valence defects in ice.
Nature 201 490 (64) with N.Cohan.

5. Molecular orbital study of the hydrogen bond in ice.
J.Chem. Phys. 43 119 (65) with N.Cohan.

6. Molecular orbital study of ionic defects in ice.
J.Chem. Phys. 43 124 (65) with N.Cohan.

7. Deuteron quadrupole coupling in D2O.
J.Chem.Phys. 44 422 (66).

8. On the hydrogen bond in an ice-like structure.
Chem.Phys. Lett. 1 85 (67) with N.Cohan and L.Blum.

9. A cell theory of liquid water.
Trans.Far.Soc. 64 2605 (68) with L.Blum.

10. A molecular orbital calculation for the hydrated electron.
Chem.Phys.Lett. 7 445 (70) with N.Cohan.

11. Criterion of completeness for the set of functions used in matrix Hartree-Fock and correlation energy calculations.
Phys.Rev. A 3 1291 (71) with V. Tolmachev.

12. The structure of the hydrated electron.
J.Chem.Phys. 59 1385 (73) with N.Cohan.

13. A quantum electronic polaron model for the solvated electron
Chem.Phys.Lett. 22 287 (73) with N.Cohan.

14. A comparison between electrons solvated in ammonia and water: the volume expansion.
Chem.Phys.Lett 26 93 (74) with N.Cohan and G.Finkelstein.

15. Density of states of disordered systems by the continued fraction method.
J.Phys.C.: Solid St.Phys. 8 109 (75) with N.Cohan.

16. The effect of non-topological disorder on the density of states of Germanium.
Solid State Comm. 16 853 (75) with N.Cohan.

17. Density of states of a one dimensional system with off-diagonal disorder.
J.Phys.C.: Solid St.Phys. 8 L 145 (75) with N.Cohan.

18. Density of States of disordered systems by the continued fraction method: II.
J.Phys.: C.Solid St.Phys. 9 473 (76) with N.Cohan.

19. Use of the continued fraction method for the study of adsorption: Hydrogen on graphite.
Solid State Comm. 20 219 (76) with N.Cohan and M.Gordon.

20. Density of states of disordered systems by the continued fraction method: III.
J.Phys.C.: Solid St.Phys. 10 383 (77) with N.Cohan.

21. Comparison of different theoretical approaches in the study of chemisorption on metal surfaces.
"Computers in Chemical Research and Education" eds. E.Lude¤a, N.Sabelli and A.C.Wahl, Plenum Press, N.York 1977.

22. The effect of non-orthogonality in the study of adsorption: Hydrogen on graphite.
Solid State Comm. 22 181 (77) with N.Cohan and M.Gordon.

23. On the density of states of disordered alloys and their moments.
J.Phys.C.: Solid St.Phys. 9 L 679 (76) with N.Cohan and C.Efeyan.

24. The effect of nonorthogonality in the density of states of some metallic disordered systems.
J.Phys.F.: Metal Phys. 7 913 (77) with N.Cohan.

25. Numerical studies of systems with diagonal and off-diagonal disorder in a nonorthogonal basis.
J.Phys.C.: Solid St.Phys 12 1835 (79) with N.Cohan.

26. Molecular Dynamics study of two dimensional and adsorbed microclusters.
J.Chem.Phys. 72 4562 (80) with N.Cohan.

27. Study of two dimensional and adsorbed microclusters by molecular dynamics.
"Ordering in two dimensions" p.327, ed. S.Sinha, Elsevier North Holland, 1980.

28. Calculation of the density of states of NbNx by the recursion method.
Solid State Comm. 44 681 (82) with N.Cohan and A.M. Llois.

29. Charge transfers in structurally disordered alloys.
Phys. Status Solidi (b) 113 395 (82) with N.Cohan.

30. Charge distribution in stucturally disordered systems.
Solid State Comm. 45 427 (83) with N.Cohan.

31. Cluster calculation on the interaction and discharge of ions on a silver surface.
J.Electroanal.Chem., 146 171 (83) with N.Cohan.

32. Electronic density of states of incommensurate disordered systems.
Phys.Rev.B 27 7379 (83) with N.Cohan and A.M.Llois.

33. Vibrational density of states of impurified rare gas crystals.
J.Phys.C.:Solid St.Phys. 16 3435 (83) with N. Cohan, H.Bonadeo and A.Frigerio.

34. Reconstruction of the density of states from its moments.
Phys. Rev. B 28 1859 (83) with A.Trias and M.Kiwi.

35. Phason and amplitudon-like vibrations of one dimensional incommensurate systems.
J.Phys.C.: Solid St.Phys. 16 5581 (83) with N.Cohan.

36. Localization in different models for one dimensional incommensurate systems.
Phys.Rev. B 29 3111 (84) with N.Cohan and A.M.Llois.

37. Specific adsorption of halogen ions on silver surfaces.
J. Electroanal.Chem. 163 381 (84) with N.Cohan and M.Jauregui.

38. Electronic densities of states of bimetallic superlattices with interfacial diffusion.
Phys.Rev. B 31 873 (85) with N.Cohan and A.Levy Yeyati.

39. Localization properties of incommensurate, disordered, one dimensional systems.
Phys.Rev.B 33 4291 (86) with A.M.Llois.

40. Transport properties of one dimensional, disordered,two-band systems.
J.Phys.C Solid St.Phys. 19 6053 (86) with M.Garc¡a,C.Balseiro and A.M. Llois.

41. Stuctural relaxation of amorphous Zr70Cu30 and its effect on the electronic properties.
Phys.Rev.B 35, 2714, (87) with A.Levy Yeyati.

42. Theoretical estimation of the electric field gradient in amorphous alloys.
Phys.Rev.B 37, 10608, (1988) with A.Levy Yeyati and A.L¢pez Garc¡a.

43. Wave functions of one dimensional incommensurate Hamiltonians: the fractal dimension and its relationship with localisation.
J.Phys.C: Solid St.Phys. 21, 2137 (1988) with A.Saul and A.M.Llois.

44. Electronic structure of copper oxide clusters in the high Tc superconductors: relation to some recent experimental data.
Solid State.Comm. 66, 491 (1988) with A.Saul, A.M.Llois and A.Levy Yeyati.

45. Electronic structure of copper oxide and fluorine substituted clusters by the iterative extended Huckel method.
Proceedings of the Latin American Conference on High Temperature Superconductivity (LACHTS), World Scientific Publ.9 290 (1988) with A.Saul, A.M.Llois and A.Levy Yeyati.

46. Effective medium calculations for an amorphous metallic alloy.
Phys.Rev.B 38 10929 (1988) with A.Levy Yeyati.

47. Evaluation of the Kubo formula for the conductivity using the recursion method.
J.Phys.Condensed Matter 1 5429 (1989) with A.Levy Yeyati and E.Anda.

48. Different localization behavior of the wave functions of incommensurate systems.
Phys.Rev.B 41 10190 (1990) with A.M.Llois.

49. Extrapolation algorithm for the terminator problem in the recursion method.
Solid State Comm.74 703 (1990) with P.Vargas, J.E.Ure and N.Majlis.

50. Calculation of the angular correlation of the positron annihilation radiation in YBaCuO.
J.Phys. Condensed Matter 2 9603 (1990) with A.Saul

51. Calculation of nuclear quadrupole splitting in high Tc superconductors.
Phys.Rev.B 42 4196 (1990) with A. Saul.

52. Alloy model for high temperature superconductors.
Physica C 180 381 (1991) with A.Saul.

53. Calculation of electronic and magnetic properties of metallic superlattices.
Phys.Rev.B 44 6870 (1991) with G.Fabricius y A.M.Llois.

54. Molecular dynamics model of interface amorfization.
Phys.Rev.B 46 2577 (1992) with M.Kiwi and R.Ramirez.

55. Calculation of electronic and magnetic properties of transition metal surfaces: Comparison of LMTO and tight-binding methods.
Phys.Rev.B 49 2121 (1994) with G.Fabricius, A.M.Llois and M.A.Khan

56. On the interaction of holes with apical oxygen vibrations in the high Tc cuprates.
Physica C 218 213 (1993) with H.Bonadeo

57. Electronic structure of the mercury based high Tc compound with four CuO2 layers.
Physica C 219 17 (1994) with C.O.Rodriguez, R.Weht, N.Christensen and E.Peltzer y Blanca.

58. Ab initio calculations of electronic band structure, nesting features of the Fermi surface and frozen phonons in the infinite layer cuprates
Physica C 223 339 (1994) with R.Weht and C.O.Rodriguez.

59. The functional dependence of the cohesive energy on coordination in transition-metal systems.
J.Phys.:Condensed Matter 6 3939 (1994) with J.Guevara and A.M.Llois

60. Electronic energy bands of Bi2 Sr2 Cu O6.
Physica C 235-240 2109 (1994) with R.Weht and C.O.Rodriguez

61. Electronic structure, nesting features and van Hove singularities in the mercury based high Tc compounds containing one to five CuO2 layers.
Physica C 235-240 2111 (1994) with C.O.Rodriguez, R.Weht,and N.Christensen.

62. Electronic and magnetic properties of Fe-Cu superlattices.
J.Phys.:Condensed matter 6 5017 (1994) with G.Fabricius and A.M.Llois

63. Electronic and magnetic properties of Mn/Cu/Mn and Mn/Ni/Mn slabs.
Surface Science 331-333 1377 (1995) with G,Fabricius, A.M.Llois, M.A.Khan and H.Dreysee

64. Electric field gradient in binary oxides at the Cd111 impurity site.
Phys.Rev.B 49 14939 (1994) with R.Weht, G.Fabricius, M.Renteria, P.Massolo and A.G.Bibiloni

65. Model potential based on tight-binding total-energy calculations for transition-metal systems.
Phys.Rev.B 52 11509 (1995) with J.Guevara and A.M.Llois

66. Are surface effects to be included in the study of the electronic structure of high Tc superconductors?
J.Phys.Chem.Solids 56, 1751 (1995) with C.O.Rodriguez, R.Weht and N.Christensen

67. Surface effects on the electronic structure of Bi 2201
Physica C 258, 360 (1996) with R.Weht, C.O.Rodriguez, N.Christensen and M.Methfessel

68. Calculation of the magnetoresistance in FeRh
Phys.Rev.B 53, R8844 (1996) with R.Gomez Abal and A.M.Llois

69. Magnetic coupling of 4d transition metal monolayers with bcc-Fe as a substrate
J.Phys.Condensed Matter 8, 6607 (1996) with R.Gomez Abal and A.M.Llois

70. Transport properties of Co/Ni superlattices
Phys,Rev.B 54, 15335 (1996) with M.Kiwi, R.Ramirez and A.M.Llois

71. Model hamiltonian for the conductivity oscillations of magnetic multilayers.
Phys.Rev.B 55, 14117 (1997) with M.Kiwi, R.Ramirez and A.M.Llois

72. Electronic properties of transition metal clusters: Consideration of the spill over in a bulk parametrization
Phys.Rev.B 54, 13283 (1997) with J.Guevara, F. Parisi and A.M.Llois

73. Spin-flip contribution to the "in-plane" conductivity of magnetic multilaters
Computational Materials Science 10, 395 (1998) with R.Gomez Abal and A.M.Llois

74. The effect of spill over in the electronic and magnetic properties of Ni, Co and Fe clusters
Computational Materials Science 10, 440 (1998) with J.Guevara, F.Parisi and A.M.Llois

75. Large variations in the magnetization of Co clusters induced by noble-metal coating
Phys.Rev.lett 81, 5306 (1998) with J.Guevara y A.M.Llois

76. Electronic properties of mixed transition metal clusters: Co clusters embedded in Ag
Rev. Mexicana de Fisica 44 Supl. 3, 29 (1998) with J.Guevara and A.M.Llois

77. Conductivity oscillations of magnetic multilayers
"Current problems in condensed matter" J.L.Moran Lopez, editor
Plenum Press, New York, USA pp.227-238 (1998)
with *M.Kiwi, A.M.Llois and R.Ramirez

78. Tight-binding molecular dynamics study of amorphous carbon deposits over silicon surfaces
Phys.Rev.B 60, 2762 (1999) with Chu-Chun Fu

79. Magnetic contribution to the segregation energies in magnetic-nonmagnetic systems
Phys.Rev.B 60, 4982 (1999) with A.Saul

80. Cobalt impurities on noble metal surfaces
Phys.Rev.B 59, 8405 (1999) with A. Saul, A. M. Llois and J. Guevara

81. A simple interpretation of quantum mirages
Physica E 10, 544 (2001) with H.Bonadeo

82. Adsorbed atoms on quantum corrals
CMT16 (Condensed Matter Theories)World Scientific (2001) with H.Bonadeo

83. Adsorbed 3d transition metal atoms and dimers on Au(111): Signatures derived from one-electron calculations
Phys.Rev.B 63, 113402 (2001) with Ana Maria Llois

84. Molecular dynamics study of dimer flipping on perfect and defective Si(001) surfaces
Surface Science 494, 119 (2001) with Chu-Chun Fu and Andres Saul

85. Diffusion pathways for Si ad-dimers on Si(001): a high temperature molecular dynamics simulation

Surface Science 481, 97 (2001) with Chu-Chun Fu and Andres Saul

86. Finite temperature simulation of addimer diffusion between dimer row and through on Si(001)
Applied Surf.Sci. 175-6, 36 (2001) with Chu-Chun Fu and Andres Saul

87. Ab-initio study of silicon multi-substituted neutral and charged fullerenes
Phys.Rev.B 63, 085411 (2001) with Chu-Chun Fu, Maider Machado and Pablo Ordejon

88. Magnetismo en sistemas de baja dimension
Anal.Acad.Nac.Cs.Ex.Fis.y Nat.,Buenos Aires, Argentina, tomo50 p.73 (1998)

89. Calculation of the interface exchange coupling constants between Fe and FeF2-like fluorides
Jour.Mag.and Mag.Materials 234, 19 (2001) with M.Kiwi and A. M. Llois

90. Magnetic behaviour of Ce(Pd M) compounds within the LDA approximation (M= Rh, Ni and Ag)
Jour.Mag.and Mag.Materials 236, 6 (2001) with V.Vildosola, A.M.Llois and J.G.Sereni

91. Sn and Sb diffusion in alpha-iron
Defects and Diffusion Forum 194-199, 97 (2001) with R.A.Perez, D.N.Torres and F.Dyment

92. Molecular dynamics study of the fragmentation of silicon doped fullerenes
Phys.Rev.B 66, 045405 (2002) with Chu-Chun Fu, J.Fava and R.Weht

93. Catalytic effect of carbon in shaping Si(111) surfaces
Surface Sci. 563, 48 (2004) with Chu-Chun Fu, J.J.Metois, J.P.Astier and A.Saul

94. Ab-initio study of the magnetic ordering in the semiconductors MnTiO2, CoTiO2 and FeTiO2
Physica B 354, 338 (2004) with L.A.Errico and M.Renteria

95. Ab-initio study of ferromagnetism induced by magnetic impurities in rutile TiO2
Physica Status Solidi (b) 241, 2399 (2004) with L.A.Errico and M.Renteria

96. Surface electronic structure of Co thin films on Cu(111)
Physica B 354, 165 (2004) with M.A.Barral and A.M.Llois

97. Ab initio study of magnetic effects on diffusion in alpha Fe
J.Phys.Cond.Matter 16, 7033 (2004) with Rodolfo Perez

98. Theoretical study of carbon coated iron nanowires
Phys.Rev.B Rapid Comm 70, 201401 (2004) with M.Kiwi, R.Ramirez and G.Garcia

99. Memories of a Latin American Woman Physicist
"100 reasons to be a scientist" p.189 (2004) ICTP 40th Anniversary

100.The effect of magnetism on Fe diffusion: New experimental results and ab-initio calculations
Defects and Diffusion Forum, 237-240, 462 (2005) with R.Perez and F.Dyment

101. Characterization of the surface states of Co(0001), Co(111) and ultrathin films of Co on Cu(111)

Phys.Rev.B 72, 125433 (2005) with Andrea Barral y Ana Maria Llois

102. Appearance of room temperature ferromagnetism in Cu-doped TiO2 films
Phys.Rev.B 72(R), 161313 (2005) with S.Duhalde, M.F.Vignolo, F.Golmar, C.Chilotte, C.E.R.Torres, L.Errico, A.F.Cabrera, M.Renteria and F.Sanchez

103. Theoretical study of magnetism in transition metal doped TiO2
Phys.Rev.B 72, 184425 (2005) with L.Errico and M.Renteria

104. Theoretical study of iron-filled carbon nanotubes
Phys.Rev.B 73, 125435 (2006)
with M.Kiwi, G.Garcia and R.Ramirez

105. Carbon encapsulated iron nanotubes
Materials Research-Poland 24, 884 (2006)
with M.Kiwi, G.Garcia and R.Ramirez

106. The role of the dopant in the magnetism of Fe-doped SnO2 films
J.M.M.M. 316,e-219,(2007)
with C.Rodriguez-Torre, L.Errico, F.Golmar, A.M. Mudarra, A.F.Cabrera, S.Duhalde and F.Sanchez

107. The role of vacancies, impurities and crystal structure in the magnetic properties of TiO2
Physica B 398, 179 (2007)
with L.Errico

108. Ab.initio approach to the effect of Fe on the diffusion in hcp Zr
J. Nuclear Materials 374, 95 (2008)
with R.Perez

109. Local structure and magnetic behaviour of Fe-doped TiO2 anatase nanoparticles: experiments and calculations
J.Phys.Cond.Matter 20, 135210 (2008)
with C.Rodriguez Torres, A.F.Cabrera, L.A.Errico, C.Adan, F.Requejo, and S.Stewart

110. Ab initio study of a TiO2/LaAlO3 heterostructure
J.Phys.Conf.Ser. 167, 012060 (2009)
with Valeria Ferrari

111. Ab initio approach to the effect of Fe on the diffusion in hcp Zr II: The energy barriers
J. Nuclear Materials 392, 100 (2009)
with R.Pasianot, V.Ramunni and R.Perez

112. Ab initio study of Fe-doped SnO: Local structure and hyperfine interactions at the Fe nucleus
J.of Physics and Chemistry of Solids 70, 1369 (2009)
with L.Errico

113. Ab initio study of magnetism at the TiO2/LaAlO3 interface
J.Mat.Sci 45, 4945 (2010)
with V.Ferrari and A.Saul

114. Electronic and magnetic properties of the different phases of Ti4O7 from density functional theory
Phys.Rev.B 84, 144419 (2011)
with R.Weht

115. Ferromagnetism in transition metal doped rutile TiO2
"Rutile: Properties, Synthesis and Applications", Nova Science Publ,Inc. (2011). Ed.: Jim Low
with L.Errico, A.Mudarra Navarro, C.Rodriguez Torres, A. Cabrera, V.Bolovol, and M. Renteria

116. Effect of low dimensionality and encapsulation on the magnetic and hyperfine properties of iron nanowires
J.Phys.Chem C 117, 19684 (2013)
with Leo Errico

117. Electronic and magnetic properties of the interface LaAlO3/TiO2 anatase from density functional theory
Journal of nanomaterials vol2012 ,757493
with Valeria Ferrari

118. Study of the relation between oxygen vacancies and ferromagnetism in Fe-doped TiO2 nano-powders.
Journal of Applied Physics 115, 223908 (2014)
with Azucena Mudarra Navarro, Claudia Rodriguez Torres, Vitally Bilovol, Fabiana Cabrera and Leo Errico

119.Atomistic simulation of soldering iron filled carbon nanotubes
Computational Materials Science 92, 457 (2014)
with Vicente Minizaga, Griselda Garcia, Eduardo Bringa, Ricardo Ramirez and Miguel Kiwi

120.Tailoring conducting filaments by electroforming polarity in memristive base TiO2 junctions
Applied Physics Letters 104, 183505 (2014)
with N.Ghenzi, M.J.Sanchez, D.Rubi, M.Rozenberg, C.Urdaniz and P.Levy

121.Tuning the insulator-metal transition in oxide interfaces: an ab-initio study exploring the role of oxygen vacancies and cation interdiffusion.
Physica Status Solidi B 251, 1601 (2014)
with Valeria Ferrari

122. Ab initio study of the ferromagnetic response, local structure and hyperfine properties of Fe doped SnO2
The Journal of Physical Chemistry C 119, 5596 (2015)
with A.M. Mudarra Navarro, C. Rodriguez Torres, A. Cabrera, K. Nomura and L. Errico