

CURRÍCULUM VITAE

SUSANA PEDROSA

Contact data:

susana.pedrosa@gmail.com

IAFE – Ciudad Universitaria, CC67 - Suc 28 (1428)

(+54-11) 4789-0179 (ext. 140)

Education

BACHILLER UNIVERSITARIO EN FÍSICA, 1990, National University of Tucumán.

LICENCIADA EN FÍSICA, National University of Tucumán. Thesis: “Dissipation in High-Tc Superconductors”, Low Temperatures Laboratory, Centro Atómico Bariloche, advisor Dr. Francisco De La Cruz, 1993

DOCTORA EN FÍSICA, National University of Tucumán. Thesis: “Dielectric response of a colloidal suspensions to alternating field”, Laboratorio de Propiedades Dieléctricas de la Materia, FaCEN, advisor Dr. Constantino Grosse, 2003.

Employment status

Member of the National Research Council of Argentina (CONICET), Numerical Astrophysics Group, Institute for Astronomy and Space Science, IAFE

Teaching Activities

- Instructor, Física Experimental II., Depto. de Física, Fac. de Ciencias Exactas y Tecnología, National University of Tucumán, July 2006 - September 2006
- Instructor, Física del Sólido y Física Experimental II. , Depto. de Física, Fac. de Ciencias Exactas y Tecnología, National University of Tucumán, November 2003 - July 2006
- Instructor, Mecánica Cuántica I y Mecánica Cuántica II. Depto. de Física, Fac. de Ciencias Exactas y Tecnología, National University of Tucumán, August 2001 - November 2003
- Instructor, Mecánica Cuántica I y Mecánica Cuántica II, Depto. de Física, Fac. de Ciencias Exactas y Tecnología, National University of Tucumán, August 1998 - August 2001
- Teaching Assitant, Laboratorio II, Programador Universitario, Facultad de Ciencias Exactas y Tecnología, National University of Tucumán, 1997.
- Teaching Assistant, Laboratorio I, Programador Universitario, Facultad de Ciencias Exactas y Tecnología, National University of Tucumán, 1997.

- Teaching Assistant “Lenguaje C”, Laboratorio Docente de Computación, Facultad de Ciencias Exactas y Tecnología, National University of Tucumán , May - June 1995.
- Physics Teacher, Gymnasium Universitario, Fac. de Filosofía y Letras, National University of Tucumán. April 1995 – March 1996

Student training:

- Advisor PhD Thesis “Formación y evolución de galaxias elípticas” , María Sol Rosito, IAFE.
- Advisor PostDoctoral fellowship: María Celeste Artale, IAFE
- Co – advisor, Licenciatura en Física, Thesis “Incidencia de Estrellas Peculiares en Cúmulos Estelares” María Victoria Rodríguez Ledesma (2004).

Research activities

Publications

- **“Angular momentum evolution for galaxies in a Λ -CDM scenario”**, S. E. Pedrosa & P. B. Tissera. A&A in press.
- **"The gas metallicity gradient and the star formation activity of disc galaxies"**, P.B. Tissera, S. Pedrosa, E. Sillero, J. M. Vilchez. Submitted – under revision.
- **“On the metallicity dependence of HMXB populations”**, V. M. Douna, L. J. Pellizza, I. F. Mirabel, S. E. Pedrosa, A&A, 579, 44, 2015.
- **“A demonstration of the conservation of the orbital angular momentum of the Earth”**, L.J. Pellizza, M. G. Mayochi, L. Ciocci Brazzano, S.E. Pedrosa, accepted American Journal of Physics, 2015.
- **“Metallicity Gradients in Simulated Galaxy Discs”**, O.N. Snaith, P.B. Tissera, S. Pedrosa, M. E. de Rossi. In preparation.
- **“The morphology of galaxies with quiescent recent assembly history in a lambda-CDM universe”**, Pedrosa, S.E.; Tissera, P.B., De Rossi, M.E., 2013, in press.
- **“On the mass assembly of low-mass galaxies in hydrodynamical simulations of structure formation”**, De Rossi, M.E.; Avila-Reese, V.; Tissera, P.B.; Gonzalez-Samaniego, A.; Pedrosa, S.E., MNRAS, 435, 2736, 2013.
- **“Fingerprints of the hierarchical building up of the structure on the gas kinematics of galaxies”**, M. E. De Rossi, P. B. Tissera & S. E. Pedrosa, A&A, 546, 52, 2012.
- **“Impact of Supernova feedback on the Tully-Fisher relation”**, De Rossi, M.E., Tissera, P.B., Pedrosa, S., A&A, 519, 89, 2010.
- **“Dark matter response to galaxy formation”**, Tissera, P.B., White, S.M.D., Pedrosa, S., Scannapieco, C., MNRAS, 406, 922, 2010.

- **"The joint evolution of baryons and dark matter haloes"** , Pedrosa, S., Tissera, P., Scannapieco, C., MNRAS, 402, 776, 2010.
- **"The impact of baryons on dark matter haloes"** , Pedrosa, S., Tissera, P., Scannapieco, C., MNRAS, 395, 57, 2009.
- **"Rotation curve bifurcations as indicators of close recent galaxy encounters "**, Pedrosa, S., Tissera, P., Fuentes – Carrera, I., Mendes de Oliveira, C., A&A, 2008, 484, 299.
- **"Corrected Results for the Influence of Size, Z Potential, and State of Motion of Dispersed Particles on the Conductivity of a Colloidal Suspensión"** C.Grosse, S.Pedrosa, and V.Shilov, *J. of Colloid & Interface Sci*, 265, 197 (2003).
- **"Numerical Calculation Of The Electrophoretic Mobility Of Colloidal Particles In Weak Electrolyte Solutions"**, S.Pedrosa, C.Grosse, and V.Shilov, *J. Colloid Interface Sci.* 260, 107-117 (2003).
- **"On The Influence Of Size, Z Potential, And State Of Motion Of Dispersed Particles On The Conductivity Of A Colloidal Suspensión"** C.Grosse, S.Pedrosa, and V.Shilov, *J. Colloid Interface Sci.*, 251, 304 (2002).
- **"Calculation of the Dielectric Increment and Characteristic Time of the LFDD in Colloidal Suspensions of Spheroidal Particles"** , C. Grosse, S. Pedrosa, and V. Shilov, *Journal of Colloid and Interface Science*, 220, 31-41, (1999).
- **"Numerical Analysis of the Concentration Polarization in Colloidal Suspensions. Comparison with Theoretical Predictions"** , S. Pedrosa and C. Grosse, *Journal of Colloid and Interface Science*, 219, 37-47, (1999).

Proceedings:

- **"Angular momentum evolution for galaxies in LCDM simulations"**, Pedrosa, S.E. & Tissera, P.B., aceptado BAAA, 2014
- **"Angular momentum conservation in LCDM simulations"**, S. E. Pedrosa & M. E. De Rossi. "Second Workshop on Numerical and Observational Astrophysics: From the First Structures to the Universe Today – FSUT2011", AAABS, 4, 108, 2013.
- **"The Tully-Fisher Relation and the formation histories of galaxies"**, M. E. De Rossi & S. E. Pedrosa. "Second Workshop on Numerical and Observational Astrophysics: From the First Structures to the Universe Today – FSUT2011", AAABS, 4, 142, 2013.
- **"The effect of supernovae on galaxy chemical evolution"**, O. N. Snaith, P. B. Tissera, S. Pedrosa, M. E. De Rossi, J. M. Vilchez; "Second Workshop on Numerical and Observational Astrophysics: From the First Structures to the Universe Today – FSUT2011", AAABS, 4, 129, 2013.

- **“Downsizing of galaxies vs upsizing of dark-halos in a Lambda-CDM cosmology”**, De Rossi, M.E.; Avila-Reese, V.; Tissera, P.B.; Gonzalez-Samaniego, A.; Pedrosa, S.E., BAAA, 55, 273, 2012.
- **“Evolution of the gas kinematics of galaxies in cosmological simulations”**, De Rossi, M.E. & Pedrosa, S.E., BAAA, 55, 269, 2012.
- **“The Tully-Fisher Relation and the dynamical evolution of galaxies”**, M. E. De Rossi, P. B. Tissera, S. E. Pedrosa, BAAA, 54, 373, 2011.
- **“Effects of Galaxy Formation on Dark Matter Haloes”**, S. E. Pedrosa, P. B. Tissera, and C. Scannapieco. XIII Latin American Regional IAU Meeting (Eds. W. J. Henney & S. Torres-Peimbert) Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 40, 82–83 (2011).
- **“Chemical and Morphological Analysis of Simulated Galaxies”**, 2011, S. E. Pedrosa, P. B. Tissera, and M. E. De Rossi. XIII Latin American Regional IAU Meeting (Eds. W. J. Henney & S. Torres-Peimbert) Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 40, pp. 128-128 (2011) (<http://www.astroscu.unam.mx/~rmaa/>).
- **“Supernova Feedback and The Bend of the Tully-Fisher Relation”**, 2011, M. E. De Rossi, P. B. Tissera, and S. E. Pedrosa. XIII Latin American Regional IAU Meeting (Eds. W. J. Henney & S. Torres-Peimbert) Revista Mexicana de Astronomía y Astrofísica (Serie de Conferencias) Vol. 40, pp. 128-128 (2011) (<http://www.astroscu.unam.mx/~rmaa/>).
- **“The role of supernova feedback in the origin of the stellar and baryonic Tully-Fisher relations”**, M. E. De Rossi, P. B. Tissera, S. E. Pedrosa, BAAA, 53, 2010.
- **“The Tully-Fisher Relation in Numerical Simulations of Structure Formation”**, IAU Symposium No. 262 – Stellar Populations – Planning for the Next Decade, Volume 262, p. 327-328. Proceedings of the International Astronomical Union, Volume 5, Issue S262, August 2009, pp327-328. Published online by Cambridge University Press 13 Apr 2010.
- **“Baryons and Dark Matter halo distribution in LCDM cosmology”**, Pedrosa, S., Tissera, P.B., Scannapieco, C., Stellar populations: Planning for the next decade, Proceedings of the International Astronomical Union, Volume 5, Issue S262, August 2009, pp 404-405. Published online by Cambridge University Press 13 Apr 2010.
- **“Effects of baryons on dark matter haloes”**, Pedrosa, S., Tissera, P.B. and Scannapieco, C, BAAA, vol 52, 2009.
- **“ The Tully-Fisher Relation in Cosmological Simulations”**, M. E. De Rossi, P.B. Tissera and S. E. Pedrosa, BAAA, vol 52, 2009.

- **"Effects of SN Feedback on the Dark Matter Distribution "** ,Pedrosa, S., Tissera, P., Scannapieco, C., IAU Symposium 254 "The Galaxy disk in a cosmological context", Copenhagen, June 2008.
- **"Effects of interaction on the rotation curves of disk galaxies"**, S. Pedrosa, P. B. Tissera, I. Fuentes-Carrera y C. Mendes de Oliveira, BAAA, 50, 271, 2007.
- **"Comparación entre dos métodos para la determinación de abundancias químicas"**, Pintado, O. I., Pedrosa, S., Adelman, S. J.; BAAA, 48, 242 – 245 (2005).
- **"Abundancias Químicas y Estado de Evolución de Estrellas Tipo B y A"**, Pintado, O. I., Pedrosa, S., Adelman, S. J.; BAAA, 47, 102 - 105, (2004)
- **"Estrellas de tipo espectral B y A observadas con EBASIM de CASLEO"**, Pintado O. I.; Adelman, S. J.; Pedrosa, S., BAAA, 46, 28-29, (2003).
- **"Análisis numérico del mecanismo de polarización de contraiones en suspensiones electrolíticas coloidales"**, S. Pedrosa y C. Grosse, *Anales AFA*, 10, 288, (1998).
- **"Determinación numérica de la conductividad estática de una suspensión electrolítica de partículas cargadas"**, S. Pedrosa y C. Grosse, *Anales AFA*, 8, 254, (1996).

Books:

"From the First Structures to the Universe Today" ,Editors: De Rossi, M.E., Pedrosa, S., Pellizza, L.J., ISBN 978-987-24948-1-0, Editorial Asociación Argentina de Astronomía.

Participation in Science Projects

Now:

- PICT 2011-0959: "Modelling galaxy formation and evolution", Raices A, Director: Dr. Patricia Tissera, IAFE.
- PIP (CONICET) 2013-2015 GI:"Formación de Galaxias", Director: Dr. Susana Pedrosa, Co-director: Dr. Patricia Tissera.
- PIP (CONICET) 2009 "Formación y evolución químico-dinámica de la estructura del universo", Director: Dr. Patricia Tissera, Co-director: Dr. Susana Pedrosa.
- Proyectos de Divulgación Científica y Tecnológica (CONICET) 2012-2013: "IAFE para todos, Talleres, Charlas y Seminarios", Director: Dr. Darío Mitnik.

Grants,Fellowships,Visits:

- Lacey Grant, Institute for Computational Cosmology de Durham, UK, April and May, 2015.
- Visiting Lecturer, Universidad Andrés Bello, Chile, junio 2014.
- Lacey Grant, Institute for Computational Cosmology de Durham, UK, February and March 2013.
- Lacey Grant, Trieste Observatory, April 2012.

- Alpha Project Grant, París – Meudon Observatory, París, Francia, May and June 2007.
- Fomec Grant, Fomec 1213, Laboratorio de Simulación en Sistemas Dinámicos, University of Jaén, Spain, February and March 2001.
- UNT Fellowship, National University of Tucumán, Laboratorio de Simulación en Sistemas Dinámicos, University of Jaén, Spain, February and March 2001.
- Fellowship of the “Secretaría de Ciencia y Técnica”, National University of Tucumán, 1995 - 2000.

Scientific meetings communications and Workshops attendance (since 2008):

- “Angular momentum evolution for galaxies in LCDM simulations”, 56 Reunión Anual de la Asociación Argentina de Astronomía, Tandil, Argentina, 2014, oral presentation
- “Segundo Taller de Herramientas para Observatorios Virtuales”, November 2013, Fundación Pablo Cassará, CABA, Fac. de Cs. Astronómicas y Geofísicas de La Plata, Argentina.
- “Saas-Fee Advanced Course” of the Swiss Society for Astrophysics and Astronomy (SSAA): “Star formation in galaxy evolution: connecting numerical models to reality”, March 2013, Villars-sur-Ollon, Switzerland.
- “Formación del disco en simulaciones numéricas LCDM”, 55 Reunión Anual de la Asociación Argentina de Astronomía, Tandil, Argentina, 2013, oral presentation.
- “Angular momentum conservation in LCDM simulations”, “New frontiers in Relativistic and Numerical Astrophysics”, IAFE, June 2012, oral presentation.
- “Angular momentum conservation in LCDM simulations”, “Interacting Galaxies and Binary Quasars: A Cosmic Rendezvous”, Trieste (Italy), April 2-5, 2012, oral presentation.
- “Angular momentum conservation in LCDM simulations”, “Second Workshop on Numerical and Observational Astrophysics: From the First Structures to the Universe Today – FSUT2011”, Noviembre, 2011, oral presentation.
- Supercomputing Techniques in Astrophysics, Santiago, Chile, April 2010. Oral presentation: “Effects of galaxy formation on dark matter haloes”.
- Primer Encuentro Nacional de Computación de Alto Rendimiento para Aplicaciones Científicas, La Falda, Córdoba, May 2010. oral presentation: “Uso de HPC en el estudio de la formación y evolución de galaxias”.
- “Angular momentum conservation in LCDM simulations”, 54 Reunión Anual de la Asociación Argentina de Astronomía, San Juan, Argentina, 2011, oral presentation.
- “Effect of galaxy formation in Dark Matter Haloes”, XIII Latin American Regional IAU Meeting, Morelia, Mexico, November 2010, oral presentation.
- “Uso de HPC en el estudio de la formación y evolución de galaxias”, “Primer Encuentro Nacional de Computación de Alto Rendimiento para aplicaciones científicas”, La Falda, Córdoba, Argentina, May, 2010, oral presentation.
- “Effects of galaxy formation on dark matter haloes”, “Supercomputing Techniques in Astrophysics”, Santiago, Chile, April, 2010, oral presentation.

- “Baryons and Dark Matter halo distribution in LCDM cosmology”, Pedrosa, S., Tissera, P.B., Scannapieco, C., Stellar populations: Planning for the next decade, poster presentation, IAU Symposium, Río de Janeiro, Brasil, August 2009.
- “The Tully-Fisher Relation in Numerical Simulations of Structure Formation”, M. E. De Rossi, P.B. Tissera and S. E. Pedrosa, Stellar populations: Planning for the next decade, poster presentation, IAU Symposium, Río de Janeiro, Brasil, August 2009.
- “Effects of baryons on dark matter haloes”, Pedrosa, S., Tissera, P.B. and Scannapieco, C, oral presentation, 52ava Reunión Anual de la Asociación Argentina de Astronomía, La Plata, Argentina, September 2009.
- "The impact of baryons on the dark matter haloes" , Pedrosa, S., Tissera, P., Scannapieco, C., oral presentation, First Workshop on Numerical Astrophysics: Chemical Evolution of Galaxies, Buenos Aires, Argentina, 24-27 November 2008.
- "Efectos de la inyección de energía de Supernova en la distribución de Materia Oscura" , Pedrosa, S., Tissera, P., Scannapieco, C., poster presentation, AFA-SUF 2008, 93 Reunión Nacional de Física Argentina, Buenos Aires, Argentina, September 2008.
- “Effects of SN energy injection on the Dark Matter distribution”, Pedrosa, S., Tissera, P., Scannapieco, C., poster presentation, “The Galaxy Disk in Cosmological Context” - IAU Symposium 254, June 2008, Copenhagen, Dinamarca.

Obsevation shifts participation:

- Project “Establishing the incidence of classical chemically peculiar stars in the LMC/SMC and far distant open clusters of our Milky Way”, Dres. H Maitzen y E Pauzen (Austria) y O. I. Pintado, 5 - 8 January 2003, Complejo Astronómico el Leoncito.
- Project “High Signal to Noise Studies of Normal and Peculiar B, A and F type Stars”, S. J. Adelman (USA), A. F. Gulliver (Canadá) y O. I. Pintado. 6 - 12 October 2003 and 5 - 8 June 2004, en el Complejo Astronómico el Leoncito.
- Project “High Signal to Noise Studies of Normal and Peculiar B, A and F type Stars”, S. J. Adelman (USA), A. F. Gulliver (Canadá) y O. I. Pintado. 24 - 29 May 2005, en el Complejo Astronómico el Leoncito.
- Project “High Signal to Noise Studies of Normal and Peculiar B, A and F type Stars”, S. J. Adelman (USA), A. F. Gulliver (Canadá) y O. I. Pintado. 13 - 19 December 2005, en el Complejo Astronómico el Leoncito.
- Project “High Signal to Noise Studies of Normal and Peculiar B, A and F type Stars”, S. J. Adelman (USA), A. F. Gulliver (Canadá) y O. I. Pintado. 11 - 17 April 2006, Complejo Astronómico el Leoncito.

Public Outreach

Publications:

- Clarín, newspaper, http://www.clarin.com/sociedad/Lanzan-pais-campana-clasificar-galaxias_0_1104489601.html
- "Es posible la minería en el espacio?", in collaboration with Alberto Rojo, El Desmitificador, http://blogs.tn.com.ar/desmitificador/2013/01/29/es_posible_la_mineria_en_el_espacio/
- "Turismo a Marte y peligro de radiación", in collaboration with Alberto Rojo, El Desmitificador, http://blogs.tn.com.ar/desmitificador/2013/06/24/turismo_a_marte_y_peligro_de_radiacion/
- "El mito del aterrizaje lunar", in collaboration with Alberto Rojo, El Desmitificador, http://blogs.tn.com.ar/desmitificador/2013/07/29/el_mito_del_aterrizaje_lunar/
- Entrevista para la FM Frecuencia Zero, http://soundcloud.com/susana-pedrosa/entrevista_fmfrezero
- "En busca de la Materia Oscura", Página12, newspaper,
- <http://www.pagina12.com.ar/diario/ciencia/19-186647-2012-02-01.html>.
- TV show "Horizontes – Ciencias Naturales", Canal Encuentro
- Asteroides, Vecinos Peligrosos?, S. Pedrosa, Suplemento Actualidad de La Gaceta, newspaper (2003)
- "Búsqueda de planetas extrasolares" O. Pintado y S. Pedrosa, Revista de la Red de Observadores del Uruguay, (2002)

Talks:

- "Formación de galaxias y materia oscura", IAFE, May, 2015
- "Formación de galaxias y materia oscura", Club de Astronomía Ingeniero Félix Aguilar, August 2014.
- Stand IAFE, "Noche de los Museos", science fair, November 2013.
- Stand IAFE, "Noche de los Museos", science fair, November 2012.
- "La Materia Oscura y la formación de Galaxias", May 2012, Asociación Argentina Amigos de la Astronomía, amateur astronomers association.
- "Materia Oscura y Formación de Galaxias", November 2009, Jornadas IAFE Abierto, science fair at IAFE.
- "Materia Oscura y Galaxias", September 2009, science fair at IAFE.

Administration and committees

Scientific meetings (since 2008)

- Chair of the LOC "Third Workshop on Numerical and Observational Astrophysics: Linking the Local to the Early Universe" 21-25 November 2014, Buenos Aires.
- LOC "Primer Encuentro Nacional de Computación de Alto Rendimiento para aplicaciones científicas", La Falda, Córdoba, May 2010.
- LOC "Second Workshop on Numerical and Observational Astrophysics: From the First Structures to the Universe Today – FSUT2011", IAFE, Buenos Aires, November 2011.
- LOC First Workshop on Numerical Astrophysics: Chemical Evolution of Galaxies, Buenos Aires, Argentina, November 2008.

Scientific Administration Committees:(since 2008)

- NOVA, Nuevo Observatorio Virtual Argentino, December 2013.
- Member of the "Consejo Directivo IAFE" August 2011 to December 2013.

Consulting

- Referee for the National Research Council of Argentina (CONICET).
- Referee for the Boletín de la Asociación Argentina de Astronomía.