

Dr. Pawel O. Mazur
Curriculum Vitae

Present Position:

Professor of Physics (since 2001)
Department of Physics and Astronomy
University of South Carolina, Columbia, SC 29208
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Education:

M.S. (1978), *Physics*, Jagiellonian University, Cracow, Poland
Ph.D. (1982) *Theoretical Physics*, Jagiellonian University, Cracow, Poland

Previous Positions:

Assistant and Associate Professor (1991-94, 1994-2001) at USC, Columbia
Assistant Professor (1983-1989) at Jagiellonian University, Cracow, Poland

Research Positions:

University of California at Los Angeles, UCLA, (1989-1991)
University of Florida, Gainesville (1988-89)
Syracuse University (1985-88)
Member of Institute for Theoretical Physics (presently KITP), UCSB (1984-85, Spring 1986)
Jagiellonian University, Cracow, Poland (1982-83).

Awards :

Visiting Professor at CERN, Geneva, May-August, 2014
Visiting Professor, Ecole Normal Supérieur and Ecole Polytechnique, Paris, March-July 2011
Directeur Associe de Recherche, C.N.R.S (France), Ecole Polytechnique, Paris, March-July 2000
Second Prize, Gravity Research Foundation, Boston, with V. P. Nair, 1988
Third Prize, Gravity Research Foundation, Boston, 1987
Third Prize, Gravity Research Foundation, Boston, 1983

Hundreds of Seminars and Colloquia over the Years

Selected Invited Talks, Plenary Session Lectures, and Lectures at Physics Schools:

Plenary Session Lectures at GR11, Stockholm (1986) and MGM4, Rome (1985)

Lectures at Theoretical Physics Schools:

Szczyrk School on Theoretical Physics, Szczyrk, Poland (1983)
Trimester in Mathematical Physics at the Stefan Banach Mathematical Center, Warsaw (1983)
The 23rd GIFT Seminar on Theoretical Physics, San Feliu Guixols, Spain (1991)
Nordic Meeting in High-Energy Particle Physics, Spatind, Norway (1994)
Cracow Summer School in Theoretical Physics, Zakopane, Poland (1994 and 2009)

Selected Invited Talks:

Invited Talk at BSM5, Balholm, Norway (1997);
Invited Lecture at the World Space Congress 2002: 34th COSPAR Scientific Assembly, Houston
Invited Talk at CMD19CMMP, Conference of the European Physical Society, Brighton (2002)
Invited Talk at Santa Fe Meeting on Supermassive Black Holes (SMBHs), Santa Fe (2006)
Invited Talk at MGM11, Berlin (2006)
Invited Talk at the First Emergent Gravitation Workshop, Leiden (2007).
Invited Talk at the AB@50 Conference in Tel Aviv (50 Years of the Aharonov-Bohm Paper) (2009)
Invited Talk at 46th Rencontres de Moriond, "Colloquium on Gravitational Waves and Experimental Gravity", la Thuile, Italy (2011)
Invited Talk at the "100 Years of General Relativity" Conference in Warsaw, Poland (2015)

Conferences and Workshops Organized:

Co-Organizer of the Conference on Fundamental Aspects of Quantum Theory, USC, Columbia, SC,
Professor Yakir Aharonov's 60th Birthday Conference (1992)

Chair and Organizer of a Conference Session, "Alternative Models of Black Holes", The 11th Marcel Grossmann Meeting (MGM11), Berlin (2006)

Co-Organizer of the First International Workshop "Condensed Matter Meets Gravity", on Emergent Gravitation in the Lorentz Center, Leiden University, Leiden, The Netherlands (2007).

Selected Publications:

3213 citations on Google Scholar Citations, h-index=29, several highly cited papers

"Surface Tension and Negative Pressure Interior of a Non-singular 'Black Hole' ", *Class. Quant. Grav.* **32** (2015) 215024 (with E. Mottola) (**35 citations**).

"Superfluid Picture for Rotating Space-Times", *Acta Phys. Polon.* **B45**, 905-916 (2014) (with G. Chapline) (**30**).

"Conformal Invariance, Dark Energy, and CMB Non-Gaussianity," *Journal of Cosmology and Astroparticle Physics*, **JCAP09(2012)024** (2012) (with I. Antoniadis and E. Mottola) (**79**).

"De Sitter Invariant Vacuum States, Vertex Operators, and Conformal Field Theory Correlators," *Acta Phys. Polon.* **B42**,1207-1218 (2011) (with A. Casher and A. J. Staruszkiewicz)

"Superfluidity and Stationary Space-Times", (2009) [arXiv:0911.2326] (with G. Chapline).

"Stability of Exponential Tails in the Scattering on Wedges and Impurities", (2009) [arXiv:0910.3425], (with Yakir Aharonov).

"Cosmological Dark Energy: Prospects for a Dynamical Theory", *New J. Phys.* **9**, 11 (2007), Invited article in Focus Issue of *New Journal of Physics on Dark Energy*, (with I. Antoniadis and E. Mottola) (**130**).

"Tommy Gold Revisited: Why Does Not The Universe Rotate?," *AIP Conf. Proc.* **822**, 160-165 (2006); in Moncao 2005, "Crisis in Cosmology Conference" (with G. Chapline) (**20**).

"Gravitational Vacuum Condensate Stars", *Proc. Nat. Acad. Sci.* **101** 9545-9550 (2004) (with E. Mottola) (**487**).

"Dark Energy and Condensate Stars: Casimir Energy in the Large", in *Norman 2003, Quantum field theory under the influence of external conditions*, 350-357, (with E. Mottola) (**43**).

"Weyl Cohomology and the Effective Action for Conformal Anomalies", *Phys. Rev.* **D64**, 104022 (2001) (with E. Mottola) (**184**).

"Gravitational Condensate Stars: An Alternative to Black Holes", LA-UR-01-5067, [gr-qc/0109035], (with E. Mottola) (**262**).

"Gravitation as a Many Body Problem", in *Balholm 1997, Beyond the Standard Model 5*, 299-305 (1997), [hep-th/9708133].

"Conformal Invariance and Cosmic Background Radiation", *Phys. Rev. Lett.* **79**, 14-17, (1997), (with I. Antoniadis and E. Mottola) (**96**).

"Criticality and Scaling in 4D Quantum Gravity", *Phys. Lett.* **B394**, 49-56 (1997), (with I. Antoniadis and E. Mottola) (**57**).

"Physical States of the Quantum Conformal Factor", *Phys. Rev.* **D55**, 4770-4784 (1997), (with I. Antoniadis and E. Mottola) (**56**).

"Gravitation, the Quantum, and Cosmological Constant", *Acta Phys. Polon.* **B27**, 1849-1858 (1996) (**33**).

"Conformal Symmetry and Central Charges in Four-Dimensions", *Nucl. Phys.* **B388**, 627-647 (1992), (with I. Antoniadis and E. Mottola) (**126**).

"The Gravitational Measure, Solution of The Conformal Factor Problem And Stability of The Ground State of Quantum Gravity", *Nucl. Phys.* **B341**, 187-212 (1990), (with E. Mottola) (**158**).

"Spinning Cosmic Strings And Quantization Of Energy", *Phys. Rev. Lett.* **57**, 929-932 (1986) (**142**).

"SU(3) Extension of The Skyrme Model", *Phys. Lett.* **B147**, 137-140 (1984) (with M. A. Nowak, M. Praszalowicz) (**199**).

"Proof of Uniqueness of The Kerr-Newman Black Hole Solution", *J. Phys.* **A15**, 3173-3180 (1982) (**343**).