CEMLA
CENTER FOR LATIN AMERICAN MONETARY STUDIES

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POSITIONS

Senior Economist, CEMLA	2022–Present
Director of Asset Management, Actinver Corporation	2017–2022
Researcher, Banco de México	2013–2017
Invited Researcher, ABACUS-CINVESTAV	2012–2013
Assistant Professor, Columbia University, Stat. Dept.	2007–2012
Postdoctoral Fellow, Columbia University, Stat. Dept.	2005–2007

CERTIFICATIONS

Figura 3 – Advisor in investment strategies, AMIB	2017

EDUCATION

Ph.D. Probability and Statistics, Columbia University in the City of New York, USA	2005
M.Sc. Probability and Statistics, Columbia University in the City of New York, USA	2002
M.A. Probability and Statistics, Columbia University in the City of New York, USA	2000
Electrical Engineering, Universidad del Tepeyac, Ciudad de México	1998

PUBLICATIONS

Peer-reviewed articles

"**Do heterogeneous countries respond differently to oil price shocks?**" (with S. Guerrero and M. Hernández-Vega). ***Journal of Commodity Markets,*** 16, 1-22, 2019.

"**A Hybrid Metaheuristic for the Efficient Solution of GARCH with Trend Models**" (with O. Schuetze and L. Uribe-Richaud). ***Computational Economics,*** 52(1), 145-166, 2018.

"**On the zeros of the Pearcey integral and a Rayleigh-type equation**". ***Bol. Soc. Mat. Mex***, 24(1), 203-217, 2018.

"**Using a functional approach to test trending volatility in the price of Mexican and international agricultural products**" (with S. Guerrero and M. Juárez). ***Agricultural Economics,*** 48, 1–13, 2017.

"**Hitting times of a Bessel bridge**" (with C. Pacheco-González). ***Comm. Stoch. Anal.,*** 9(1), 79-92, 2015.

"**On hitting times, Bessel bridges, and Schrodinger's equation**". ***Bernoulli,*** 19(5a), 1559-1575, 2013.

"**On the density of the first time that a 3-D Bessel bridge hits a boundary**". ***Stoch. Models,*** 28(4), 649-662, 2012.

"**Optimal execution of derivatives, a Taylor expansion approach**" (with Y. Sun), ***Stochastic Systems: Optimization, Control, and Applications***, 157-163, 2012.

"**On changes of measure and representations of the first hitting time of a Bessel process**". ***Comm. Stoch. Anal***, 5(4), 701-719, 2011.

"**A note on distributional equations in discounted risk processes**" (with C. Pacheco-González). ***Morfismos***, 14(2), 1-15, 2010.

"**An integral equation for the distribution of the first exit time of a reflected Brownian motion**" (with V. De-La-Peña and C. Pacheco-González). ***ANZIAM J.***, 50(4), 2009.

"**A comparison of 2-CUSUM stopping rules for quickest detection of two-sided alternatives through the derivation of the mean of a general 2-CUSUM**" (with O. Hadjiliadis and I. Stamos). ***J. of Sequential Analysis***, 28(1), 92-114, 2009.

"**Some observations of atmospheric luminosity as a possible earthquake precursor**" (with M. Araiza-Quijano). ***Geofísica Internacional***, 4, 403-408, 1996.

Working Papers

"**On a new class of barrier options**", ***Banco de México Working Papers,*** No. 2014-23, 2014.

"**Valuation of credit default swaps via Bessel bridges**" (with C. Pacheco-González), ***Banco de México Working Papers***, No. 2014-27, 2014.

"**On the pricing of defaultable bonds and Hitting times of Ito processes**", ***Banco de México Working Papers***, No. 2015-21, 2015.

"**A functional approach to test trending volatility**" (with S. Guerrero and M. Juárez-Torres), ***Banco de México Working Papers***, No. 2016-03, 2016.

"**Do heterogeneous countries respond differently to oil price shocks?**" (with S. Guerrero and M. Hernández-Vega), ***Banco de México Working Papers***, No. 2018-09, 2018.