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Departamento: Estadística e Investigación Operativa y Didáctica de la Matemática

Área: Estadística e Investigación Operativa

Grupo de investigación: **SMIRE+CoDIRE** Estadística con Elementos Imprecisos Aleatorios & Comparación de Distribuciones entre Elementos Aleatorios

TESIS DOCTORAL

Teoremas de aproximación y convergencia para funciones y conjuntos aleatorios 2003. Universidad de Oviedo

TESIS DIRIGIDAS

Distribuciones de probabilidad de elementos aleatorios imprecisos 2024. Universidad de Oviedo

Doctorando: [Alonso de la Fuente, Miriam](#)

PUBLICACIONES

Publicaciones de PEDRO NICOLAS TERAN AGRAZ

2025

Laws of large numbers for Sugeno integrals Information Sciences, Vol. 701

Statistical depth and support medians for fuzzy data Fuzzy Sets and Systems, Vol. 504

2024

Convergence of random elements via fuzzy integrals Fuzzy Sets and Systems, Vol. 478

Projection depth and Lr-type depths for fuzzy random variables Fuzzy Sets and Systems, Vol. 487

2023

Convergence in distribution of fuzzy random variables in Lp-type metrics Fuzzy Sets and Systems, Vol. 470

Convergence theorems for random elements in convex combination spaces Fuzzy Sets and Systems, Vol. 458, pp. 69-93

Sets of Probability Measures and Convex Combination Spaces Proceedings of Machine Learning Research

Simplicial depths for fuzzy random variables Fuzzy Sets and Systems, Vol. 471

2022

Properties of Statistical Depth with Respect to Compact Convex Random Sets: The Tukey Depth Mathematics, Vol. 10, Núm. 15

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2021

Joint measurability of mappings induced by a fuzzy random variable Fuzzy Sets and Systems, Vol. 424, pp. 92-104

M-estimators and trimmed means: from Hilbert-valued to fuzzy set-valued data

Advances in Data Analysis and Classification, Vol. 15, Núm. 2, pp. 267-288

2020

Harmonizing two approaches to fuzzy random variables Fuzzy Optimization and Decision Making, Vol. 19, Núm. 2, pp. 177-189

2019

Choquet theorem for random sets in polish spaces and beyond Advances in Intelligent Systems and Computing

2018

Contrasting two laws of large numbers from possibility theory and imprecise probability Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)

Sublinear Expectations: On Large Sample Behaviours, Monte Carlo Method, and Coherent Upper Previsions Studies in Systems, Decision and Control (Springer International Publishing), pp. 375-385

2016

A Multivalued Strong Law of Large Numbers Journal of Theoretical Probability, Vol. 29, Núm. 2, pp. 349-358

2015

Counterexamples to a central limit theorem and a weak law of large numbers for capacities Statistics and Probability Letters, Vol. 96, pp. 185-189

Law of the iterated logarithm under weaker probability axiomsXXXV Congreso Nacional SEIO: IX Jornadas de Estadística Pública : Universidad Pública de Navarra, Pamplona, del 26 al 29 de mayo de 2015

Towards objective Bayesian foundations with fuzzy events PROCEEDINGS OF THE 2015 CONFERENCE OF THE INTERNATIONAL FUZZY SYSTEMS ASSOCIATION AND THE EUROPEAN SOCIETY FOR FUZZY LOGIC AND TECHNOLOGY

2014

Jensen's inequality for random elements in metric spaces and some applications
Journal of Mathematical Analysis and Applications, Vol. 414, Núm. 2, pp. 756-766

Law of large numbers for the possibilistic mean value Fuzzy Sets and Systems, Vol. 245, pp. 116-124

Laws of large numbers without additivity Transactions of the American Mathematical Society, Vol. 366, Núm. 10, pp. 5431-5451

Random fuzzy sets: why, when, how BEIO, Boletín de Estadística e Investigación Operativa, Vol. 30, Núm. 1, pp. 5-29

Strong consistency and rates of convergence for a random estimator of a fuzzy set
Computational Statistics and Data Analysis, Vol. 77, pp. 130-145

2013

Algebraic, metric and probabilistic properties of convex combinations based on the t-normed extension principle: The strong law of large numbers Fuzzy Sets and Systems, Vol. 223, pp. 1-25

2011

Centrality as a gradual notion: A new bridge between fuzzy sets and statistics
International Journal of Approximate Reasoning

2010

Connections between Statistical Depth Functions and Fuzzy Sets COMBINING SOFT COMPUTING AND STATISTICAL METHODS IN DATA ANALYSIS

Connections between statistical depth functions and fuzzy sets Advances in Intelligent and Soft Computing

Intersections of balls and the ball hull mapping Journal of Convex Analysis, Vol. 17, Núm. 1, pp. 277-292

On consistency of stationary points of stochastic optimization problems in a Banach space Journal of Mathematical Analysis and Applications, Vol. 363, Núm. 2, pp. 569-578

2009

A new bridge between fuzzy sets and statistics 2009 International Fuzzy Systems Association World Congress and 2009 European Society for Fuzzy Logic and Technology Conference, IFSA-EUSFLAT 2009 - Proceedings

A new bridge between fuzzy sets and statistics PROCEEDINGS OF THE JOINT 2009 INTERNATIONAL FUZZY SYSTEMS ASSOCIATION WORLD CONGRESS AND 2009 EUROPEAN SOCIETY OF FUZZY LOGIC AND TECHNOLOGY CONFERENCE

2008

A continuity theorem for cores of random closed sets Proceedings of the American Mathematical Society, Vol. 136, Núm. 12, pp. 4417-4425

Group Decision Making with Soft AHP Based on the Random Set View of Fuzzy Sets
SOFT METHODS FOR HANDLING VARIABILITY AND IMPRECISION

Group decision making with soft AHP based on the random set view of fuzzy sets
Advances in Soft Computing, Vol. 48, pp. 427-434

On a uniform law of large numbers for random sets and subdifferentials of random functions Statistics and Probability Letters, Vol. 78, Núm. 1, pp. 42-49

On convergence in necessity and its laws of large numbers Advances in Soft Computing, Vol. 48, pp. 289-296

On the equivalence of Aumann and Herer expectations of random sets Test, Vol. 17, Núm. 3, pp. 505-514

Strong law of large numbers for t-normed arithmetics Fuzzy Sets and Systems, Vol. 159, Núm. 3, pp. 343-360

2007

Conjuntos aleatorios: esperanzas de Aumann y Herer BEIO, Boletín de Estadística e Investigación Operativa, Vol. 23, Núm. 1, pp. 6-11

Probabilistic foundations for measurement modelling with fuzzy random variables
Fuzzy Sets and Systems, Vol. 158, Núm. 9, pp. 973-986

2006

A Large Deviation Principle for random upper semicontinuous functions

Proceedings of the American Mathematical Society, Vol. 134, Núm. 2, pp. 571-580

A general law of large numbers, with applications Advances in Soft Computing,
Vol. 37, pp. 153-160

A general law of large numbers, with applications SOFT METHODS FOR
INTEGRATED UNCERTAINTY MODELLING

A note on Yoshida's optimal stopping model for option pricing European Journal of
Operational Research, Vol. 170, Núm. 2, pp. 672-676

On Borel measurability and large deviations for fuzzy random variables Fuzzy Sets
and Systems, Vol. 157, Núm. 19, pp. 2558-2568

On the inexistence of additive equi-lipschitzian parametrizations of compact
convex subsets Set-Valued Analysis, Vol. 14, Núm. 4, pp. 319-326

The law of large numbers in a metric space with a convex combination operation
Journal of Theoretical Probability, Vol. 19, Núm. 4, pp. 875-898

2005

A random set extension of a strong law of large numbers of Cantrell and Rosalsky
Stochastic Analysis and Applications, Vol. 23, Núm. 4, pp. 751-756

A reduction principle for obtaining Tauberian theorems for statistical convergence
in metric spaces

Bulletin of the Belgian Mathematical Society - Simon Stevin, Vol. 12, Núm. 2, pp.
295-299

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Núm. 2, pp. 191-208

2004

A random approximation of set valued càdlàg functions Journal of Mathematical Analysis and Applications, Vol. 298, Núm. 1, pp. 352-362

Cones and decomposition of sub- and supermartingales Fuzzy Sets and Systems, Vol. 147, Núm. 3, pp. 465-474

Function-valued Korovkin systems without quasiconcavity and set-valued Korovkin systems without convexity Journal of Approximation Theory, Vol. 127, Núm. 1, pp. 74-82

2003

A strong law of large numbers for random upper semicontinuous functions under exchangeability conditions Statistics and Probability Letters, Vol. 65, Núm. 3, pp. 251-258

Distance transforms for real-valued functions Journal of Mathematical Analysis and Applications, Vol. 278, Núm. 2, pp. 472-484

2002

On the random approximation of a fuzzy set Proceedings of the Joint Conference on Information Sciences

Set-valued extension of operators via Steiner selections (I) - Theoretical results

Applied Mathematics and Mechanics (English Edition), Vol. 23, Núm. 5, pp. 568-579

Set-valued extension of operators via Steiner selections(II)-Applications to approximation Applied Mathematics and Mechanics, Vol. 23, Núm. 5, pp. 580-589

2001

Approximation of mappings with values which are upper semicontinuous functions Journal of Approximation Theory, Vol. 113, Núm. 2, pp. 245-265

On Bernstein approximants and the ϕ -variation of a fuzzy random variable Information Sciences, Vol. 133, Núm. 1-2, pp. 39-67