**TENTH INTERNATIONAL CONFERENCE ON FUZZY SET THEORY AND APPLICATIONS
FSTA 2010
Liptovský Ján, Slovak Republic**

<u>Monday - February 1, 2010</u>

9.00 –   9.15 Conference opening

<u>Chairperson: R. Mesiar</u>
 9.20 – 10.10 KHURSHID Ahmad: The end of rationality?

10.10 – 10.40 Coffee break

Session A: *Fuzzy modelling and applications (org. I. Perfilieva, M. Štěpnička),* Chairperson: M. Štěpnička
10.40 – 11.05 PERFILIEVA Irina, HOĎÁKOVÁ Petra, WRUBLOVÁ Michaela: On the interpolation of a sparse fuzzy data
11.05 – 11.30 PERFILIEVA Irina, PAVLISKA Viktor: First degree F-transform versus Takagi-Sugeno models
11.30 – 11.55 DAŇKOVÁ Martina: Graded fuzzy rules based on inverse F-transforms

Session B: Chairperson: A. Šostak
10.40 – 11.05 ASMUSS Svetlana: On approximation under L-fuzzy information
11.05 – 11.30 LEBEDINSKA Julija: Fuzzy inverse matrix and its applications
11.30 – 11.55 ULJANE Ingrida: On the concept of bornology in the context of many-valued sets

Session C: Chairperson: M. Kalina
10.40 – 11.05 JANIŠ Vladimír: Cuts of IF-sets
11.05 – 11.30 BUSTINCE Humberto, FERNANDEZ Javier, BEDREGAL Benjamin: The contractive property for interval-valued fuzzy mappings
11.30 – 11.55 DESCHRIJVER Glad, KRÁĽ Pavol: On the properties of cardinality based similarities of interval-valued fuzzy sets

L U N C H

15.50 – 16.10   Coffee break

Session A: *Aggregation functions (org. A. Kolesárová),* Chairperson: A. Kolesárová
16.10 – 16.35 FODOR János, RUDAS Imre: On migrative triangular norms
16.35 – 17.00 KOLESÁROVÁ Anna, MORDELOVÁ Juliana, STUPŇANOVÁ Andrea: Aggregation functions as extensions of fuzzy measures
17.00 – 17.25 ŠABO Michal: Self-reversibility and some other properties of binary operations
17.25 – 17.50 BELIAKOV Gleb, SIMON James, MORDELOVÁ Juliana, RÜCKSCHLOSSOVÁ Tatiana, YAGER Ronald R.: Generalized Bonferroni mean operators in multi-criteria aggregation

Session B: *Workshop on quantum logics (org. O. Nánásiová),* Chairperson: O. Nánásiová
16.10 – 16.35 PULMANNOVÁ Silvia: Observables on sigma-complete lattice effect algebras
16.35 – 17.00 CHOVANEC Ferdinand, JUREČKOVÁ Mária: Fractal difference posets
17.00 – 17.25 VINCEKOVÁ Elena: Congruences and ideals in effect and pseudo-effect algebras considered as total structures
17.25 – 17.50 AL-ADILEE Ahmed, NÁNÁSIOVÁ Oľga: Relationships between an s-map and QL-copula

Session C: Chairperson: B. Šešelja
16.10 – 16.35 KALINA Martin, MANZI Maddalena: Characterization of TS−measures
16.35 – 17.00 RENČOVÁ Magdaléna: An overview of probability theory on fuzzy events and an extensions
17.00 – 17.25 ŠPIRKOVÁ Jana, KRÁĽ Pavol: Aggregation functions and utility functions in general insurance
17.25 – 17.50 DANESHVAR Babak R., SERPIL Erol: The DEA - FANP department ranking model applied in Iran Amirkabir University
D I N N E R
20:00   LECTURE HALL A: <u>WORKSHOP ON AGGREGATION</u> *(org. R. Mesiar)*

Tuesday – February 2, 2010

<u>Chairperson: P. Cintula</u>
 8.30 – 9.20 NOGUERA Carles: From fuzzy sets to mathematical fuzzy logic
 9.20 – 10.10 NOVÁK Vilém: On higher-order fuzzy logics

10.10 – 10.40 Coffee break

Session A: Fuzzy modeling and applications (org. I. Perfilieva, M. Štěpnička), Chairperson: I. Perfilieva
10.40 – 11.05 ŠTĚPNIČKA Martin, DVOŘÁK Antonín, PAVLISKA Viktor, VAVŘIČKOVÁ Lenka: Fuzzy approach to time series analysis part I - Recent results
11.05 – 11.30 ŠTĚPNIČKA Martin, DVOŘÁK Antonín, PAVLISKA Viktor, VAVŘIČKOVÁ Lenka: Fuzzy approach to time series analysis part II – Problems of linguistic descriptions
11.30 – 11.55 HOLČAPEK Michal: A noise reduction using a smoothing filter based on the F-transform

Session B: Stochastic dependence and copulas (org. F. Durante, P. Sarkoci), Chairperson: F. Durante
10.40 – 11.05 KLEMENT Erich Peter, KOLESÁROVÁ Anna, STUPŇANOVÁ Andrea: Chebyshev stability of discrete universal integrals based on copulas
11.05 – 11.30 JWAID Tarad, DE BAETS Bernard: Double-conic copulas
11.30 – 11.55 JWAID Tarad, DE BAETS Bernard, DE MEYER Hans: Semi-quadratic copulas

Session C: Chairperson: I. Uljane
10.40 – 11.05 ELKINS Aleksandrs: Algebraic operations with relations on a set and corresponding rough approximation operators
11.05 – 11.30 GRIGORENKO Olga: Categorical aspects of aggregation of fuzzy relations
11.30 – 11.55 KRÍDLO Ondrej, KRAJČI Stanislav, PISKOVÁ Lenka: L-bonds between two L-fuzzy formal contexts

L U N C H

16.15 – 16.35 Coffee break

Session A: Fuzzy modeling and applications (org. I. Perfilieva, M. Štepnička), Chairperson: V. Novák
16.35 – 17.00 HUŇKA František, PAVLISKA Viktor: Error optimization of fuzzy transform using evolution algorithms
17.00 – 17.25 CÁNOVAS José S., KUPKA Jiří: On the topological entropy of fuzzified discrete dynamical systems
17.25 – 17.50 DVOŘÁK Antonín, HOLČAPEK Michal: Relativizations of L-fuzzy quantifiers of type <1> determined by fuzzy measures

Session B: Stochastic dependence and copulas (org. F. Durante, P. Sarkoci), Chairperson: P. Sarkoci
16.35 – 17.00 BACIGÁL Tomáš: Stressing dependence function in Archimax copulas with basic generators
17.00 – 17.25 JÁGR Vladimír: Copulas invariant with respect to conditioning

Session C: Chairperson: G. Jenča
16.35 – 17.00 NAVARA Mirko: Algebraic view on tribes
17.00 – 17.25 URBAŃSKI Michal K., BZOWSKI Adam: Construction of membership function based on measurement data
17.25 – 17.50 ALIMORADI M.R., KORDI A., JABARI KHANBEHBIN T., AHMADI A.: Soft rings

D I N N E R

20:00 LECTURE HALL A: <u>OPEN PROBLEMS SESSION</u> *(org. R. Mesiar)*

Wednesday – February 3, 2010

Session A: Chairperson: M. Šabo

  8.30 – 8.55 BACZYNSKI Michal, LUKASIK Radoslaw: The mutual independence of the properties in the characterization of R-implications generated from left-continuous t-norms

  8.55 – 9.20 BACZYNSKI Michal, LUKASIK Radoslaw: On the different laws of contraposition for fuzzy implications

  9.20 – 9.45 BIBA Vladislav, HLINĚNÁ Dana, KALINA Martin, KRÁĽ Pavol: Generated fuzzy implications and I-fuzzy equivalences

  9.45 – 10.10 DRYGAŚ Pawel: Connection between n-uninorms and balanced operators

10.10 – 10.35 MALINOWSKI Marek T., MICHTA Mariusz: Stochastic fuzzy differential equations

Session B: Chairperson: M. Navara

  8.30 – 8.55 LEBEDINSKA Julija: T-extension: a method of construction of a generalized aggregation operator

  8.55 – 9.20 ORLOVS Pavels: T-norm based aggregation of L-fuzzy real numbers

  9.20 – 9.45 RUZHA Vechislav: A concept of a fuzzy valued integral over a fuzzy set with respect to a fuzzy valued T-measure

  9.45 – 10.10 COUCEIRO Miguel: On two generalizations of associativity

10.10 – 10.35 TAKÁCS Márta: Structured risk management model with fuzzy background

Session C: Chairperson: R. Frič

  8.30 – 8.55 ŠEŠELJA Branimir, TEPAVČEVIČ Andreja: Lattice valued algebras and identities

  8.55 – 9.20 BUDIMIROVIČ Branka, BUDIMIROVIČ Vjekoslav, TEPAVČEVIČ Andreja: Fuzzy completely regular semigroups and fuzzy – subgroups

  9.20 – 9.45 SOLOVJOVS Sergejs: Composite variety-based topological theories

  9.45 – 10.10 ŠOSTAK Alexander: M-approximative systems: some recent results and examples related to fuzzy topology and rough sets

10.35 – 11.05 Coffee break

Chairperson: B. De Baets
11.05 – 11.55 PAP Endre: 20 years of pseudo-analysis and its applications

L U N C H

13.00 – 18.00 SOCIAL EVENT (two options)

D I N N E R

19.00   Concert of participants (organizer B. Riečan)

Thursday – February 4, 2010

Session A: *Mathematical fuzzy logic (org. L. Běhounek, P. Cintula, C. Noguera),* Chairperson: C. Noguera
 8.30 – 8.55   BĚHOUNEK Libor, BODENHOFER Ulrich, CINTULA Petr, SAMINGER-PLATZ Susanne, SARKOCI Peter: Graded properties of t-norms
 8.55 – 9.20   BĚHOUNEK Libor, BODENHOFER Ulrich, CINTULA Petr, SAMINGER-PLATZ Susanne, SARKOCI Peter: Graded properties of dominance
 9.20 – 9.45   PETRÍK Milan, SARKOCI Peter: Web geometrical view of triangular norms and subnorms
 9.45 – 10.10   CHVALOVSKÝ Karel: Independence of axioms in non-classical logics and automated theorem proving

Session B: Chairperson: A. Dvurečenskij
 8.30 – 8.55   RIEČANOVÁ Zdenka: Lattice effect algebras and the existence of states
 8.55 – 9.20   PASEKA Jan: Modularity, atomicity and states in Archimedean lattice effect algebras
 9.20 – 9.45   GAROLA Claudio: Generalized observables and mixtures in the ESR model for QM
 9.45 – 10.10   SOZZO Sandro: The Modified BCHSH Inequalities in the ESR Model for QM

Session C: Chairperson: Jun Li
 8.30 – 8.55   PETRIČKOVÁ Anna: Moments of Markov-switching models
 8.55 – 9.20   LENČUCHOVÁ Jana: Testing linearity for Markov-switching models
 9.20 – 9.45   BOHDALOVÁ Mária, GREGUŠ Michal: Fuzzy fractals and finance time series
 9.45 – 10.10   BOHDALOVÁ Mária, KALINA Martin, NÁNÁSIOVÁ Oľga: Comparision of quantum and classical models of time series

10.10 – 10.40   Coffee break

Session A: Chairperson: S. Pulmannová
10.40 – 11.05 FRIČ Roman, PAPČO Martin: A generalization of fuzzy sets and its application to quantum probability I
11.05 – 11.30 FRIČ Roman, PAPČO Martin: A generalization of fuzzy sets and its application to quantum probability II
11.30 – 11.55 JENČA Gejza: Coexistence in interval effect algebras

Session B: Chairperson: E. Pap
10.40 – 11.05 BOCCUTO Antonio: Limit theorems in (l)-groups with respect to (D)-convergence
11.05 – 11.30 LI Jun, MESIAR Radko: Regularity of non-additive measures on complete and separable metric space
11.30 – 11.55 ZHANG Qiang, SUN Hongxia: Monotone set-valued function defined by set-valued Choquet integral

Session C: Chairperson: J. Fodor
10.40 – 11.05 HORVÁTH K. Eszter, ŠEŠELJA Branimir, TEPAVČEVIČ Andreja: Rectangular fuzzy relations and islands
11.05 – 11.30 JANIŠ Vladimír, RENČOVÁ Magdaléna, ŠEŠELJA Branimir, TEPAVČEVIČ Andreja: Constructing a lattice and a lattice valued relation by closure systems
11.30 – 11.55 TAKAČI Aleksandar, ŠKRBIČ Srdjan, RACKOVIČ Miloš: Fuzzy relations induced from crisp orderings and equivalences

L U N C H

Session A: Chairperson: Z. Riečanová

15.25 – 15.50 CIUNGU Lavinia C., DVUREČENSKIJ Anatolij, HYČKO Marek: State BL-algebras

15.50 – 16.15 DVUREČENSKIJ Anatolij: Characterization of subdirectly irreducible state-morphism BL-algebras

16.15 – 16.35 Coffee break

Session B: Chairperson: R. Mesiar

15.50 – 16.15 SEMPI Carlo: Characterization of quasi-copulae: the proof by Cuculescu & Theodorescu

16.15 – 16.35 Coffee break

Chairperson: M.Saberi

16.35 – 17.00 KLIMO Martin, BOROŇ Juraj: Temporary properties of RS fuzzy flip–flops

17.00 – 17.25 LUKASIK Szymon, KULCZYCKI Piotr: Data dimensionality and sample size reduction for fuzzy modeling and control

17.25 – 17.50 LOVASSY Rita, KÓCZY T. László, GÁL László: Fuzzy flip–flops as basic components in fuzzy neural networks

Session C: Chairperson: J. Tóth

15.25 – 15.50 IMAN Maryam, SABERI Morteza, AZADEH Ali, HOSEINI Ashraf, ASHJARI Behzad: Fuzzy inference to risk assessment on railway signal systems

15.50 – 16.15 SABERI Morteza, AZADEH Ali, NADIMI Vahid, IMAN Minoo: An adaptive-network-based fuzzy inference system for long-term electricity consumption forecasting (2008-2015): A case study of Netherland, Luxembourgh, Ireland, Italy

16.15 – 16.35 Coffee break

Chairperson: Zhang Qiang

16.35 – 17.00 BUKOR József, MIŠÍK Ladislav, TÓTH János, T.: On mapping preserving universal fuzzy measurability

17.00 – 17.25 KALMBACH Gudrun H.E.: Evolution of Physics

19.00   B A N Q U E T

Friday – February 5, 2010

Chairperson: C. Sempi

 9.00 –   9.50 DURANTE Fabrizio: Copulas and extreme events
 9.50 – 10.40   ZHANG Qiang, MESIAR Radko, LI Jun, STRUK Peter: Generalized integral

10.40 – 11.05 Coffee break

11.05 – 11.55 DE BAETS Bernard: A tour of cycle-transitivity

11.55 – 12.00 Closing ceremony

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