	18th International Conference on Hybrid Intelligent Systems (HIS'2018) Porto, Portugal, 13-15 December, 2018 http://www.mirlabs.org/his18/
Title of Session	**Entropy in Hybrid Intelligent Systems**
Objectives and scope	The development of entropy concepts in hybrid intelligent systems has been grown in the recent years. Additionally, the adoption of entropy-based tools in these fields produced new and richer developments and applications. This special session intends to bring together researchers from all countries to provide contributions addressing entropy concepts, both theoretical and applied, in hybrid intelligent systems. Researchers are invited to contribute with novel work papers, surveys and case studies.
Topics of Interest	Submissions ought to focus on, but not limited to, the following topics: - Information Theory: Shannon entropy, Kullback-Leibler divergence, Renyi entropy, other entropies, and applications; - Complex Systems: self-organization, chaos and nonlinear dynamics, simplicity and complexity, networks, symmetry breaking, similarity; - Computing: big data, database design and querying, intelligent sampling, networks, cloud computing, pattern recognition, coding and compression, information transfer, reversibility, information loss, social networking, Game theory; - Machine Learning and Systems Theory: artificial intelligence, neural networks, evolutionary algorithms, social algorithms, cybernetics, robotics, man-machine interfaces.
Session Chair / Co-chair	E. J. Solteiro Pires, J. A. Tenreiro Machado, P. B. de Moura Oliveira
Scientific Committee	
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Brief Biography of the session	E. J. Solteiro Pires received the B.Sc. Degree (1994) in Electrical Engineering from the University of

Organizers	Coimbra, Coimbra, Portugal, the M.Sc. Degree (1999) in Electrical and Computer Engineering from the University of Porto, Porto, Portugal, Ph.D. degree (2006) and 'Habilitation' (2016) from the University of Trás-os-Montes and Alto Douro (UTAD), Vila Real, Portugal. He is currently an Auxiliary Professor with UTAD. His current research interests include evolutionary computation, multiobjective problems, entropy and fractional calculus. J. A. Tenreiro Machado was born at 1957. He graduated with 'Licenciatura' (1980), PhD. (1989) and 'Habilitation' (1995), in Electrical and Computer Engineering at the University of Porto. During 1980-1998 he worked at the Dept. of Electrical and Computer Engineering of the University of Porto. Since 1998 he works at the Institute of Engineering, Polytechnic Institute of Porto. He is presently Principal Coordinator Professor at the Dept. of Electrical Engineering, Institute of Engineering, Polytechnic of Porto, Portugal. He published 98 chapters of international books, 355 papers in international journals, 366 papers in international conferences, 4 books in Portuguese, 6 books in English. Editor of 16 books, Guest-Editor of 42 special issues in journals. Editor-in-Chief of Journal of Applied Nonlinear Dynamics, Associate Editor of Nonlinear Dynamics (Springer), Communications Nonlinear Science and Numerical Simulation (Elsevier), Fractional Calculus and Applied Analysis (de Gruyter), Journal of Vibration and Control (Sage), Entropy (MDPI), Int. J. of Nonlinear Sciences and Numerical Simulation (de Gruyter), Applied Mathematical Modelling (Elsevier), Computational and Applied Mathematics (Springer), Acta Polytechnica Hungarica, and others. His research interests include: Complex systems, Nonlinear Dynamics, Fractional Calculus, Modelling, Entropy, Control, Data series analysis, Biomathematics, Evolutionary Computing, Genomics, Robotics and Mechatronics, and Intelligent Transportation Systems. Paulo Moura Oliveira received the Electrical Engineering degree in 1991, from the UTAD University, Portugal, MSc in Industrial Control Systems in 1994 and PhD in Control Engineering in 1998, both from Salford University, Manchester, UK. He is an Associated Professor with Habilitation at the Engineering Department of UTAD University and a researcher at the INESC TEC institute. His research interests are focused on the fields of control engineering, intelligent control, PID control, control education, evolutionary and natural inspired algorithms for single and multiple objective optimization problem solving. He is author in more than 150 peer-reviewed scientific publications.