Challenges with MEDER conference

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Abstract - MEDER (Mechanism Design for Robots) is a successful series of Symposiums that was started in Mexico City in 2010, continued succesfully in Beijing in 2012, in Aalborg in 2015, in Udine 2018 and in Poitiers 2021, with the typical IFToMM character of a well-focused scientific event within a colloquial friendly frame. The keynote will survey the historical development of the MEDER event that was initiated to address a specific need of a specific conference event to discuss the mechanical aspects of robot designs and operations, but immediately it included those multidisciplinary interests that are typical of Robotics. Several challenges are discussed from the above founding perspectives in terms of topics, but also of expertise identity and related specific community while looking to the fact that a topic arise interests in existing community and vice versa so that accumulation of knowledge and experience makes discipline and community (person aggregation) with specific characteristics. The past MEDER challenges of reinforcing the significance and benefits of mechanism design aspects in design and performance of robotic systems as well in their applications in several and new fields (from industrial ones to service areas), are discussed towards the future ones even looking again to theoretical aspects as topology structures, to optimal sizing with multifunctional objective targets (with mechatronic formulation), to sensored controlled efficient operation for energy saving and human-machine interaction, and to a really integrated synergic design and operation of the mechatronic structure and behavior of robotic systems in any applications old or new. The speech is also planned with the presentation of emblematic examples from the speaker direct experiences, not only as co-founder of MEDER event but also as a representative expert in the field of Mechanism Design for Robots.

Keywords: Mechanism Design, Robotics, History of MEDER, Distinguished Figures, History of MMS, Challenges for MEDER, Designs, Operations, Applications

Main references for further reading

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