

MEDER 2018 – FINAL PROGRAM

The Symposium will be held at “Polo Scientifico Rizzi” of the University of Udine- Via delle Scienze 206, Udine.

Tuesday 11 September

9,00 – 9,30	Opening session – Room Gamma1 (γ 1)	
9,30 – 10,30	Plenary lecture - Dr. Hofbaur (Joanneum Research) - Room Gamma1 (γ 1)	
10,30 - 10,50	Coffee break	
10,50 – 12,50	Session 1: Gripper mechanisms Room Gamma1 (γ 1)	Special Session: Human-safe robots and mechanisms - Room Delta1 (δ 1)
12,50 – 13,50	Buffet lunch Meeting of the IFToMM TC on Linkages and Mechanical Controls	
13,50 – 14,50	Presentation of sponsoring companies - Room Gamma1 (γ 1)	
14,50 – 16,30	Session 3: Mechanisms design I Room Gamma1 (γ 1)	Session 4: Parallel robots Room Delta1 (δ 1)
16,30 – 16,50	Coffee break	
16,50 – 17,30	ISC meeting - Room Gamma1 (γ 1)	
19,30 - 21,00	Welcome Reception <i>Casa della Contadinanza – Udine Castle</i>	

Wednesday 12 September

9,00 – 10,00	Plenary lecture – Mr. Barel (Brovedani Group) - Room Gamma1 (γ 1)	
10,00 - 10,20	Coffee break	
10,20 – 12,20	Session 5: Mechanisms design II Room Gamma1 (γ 1)	Session 6: Humanoid and special robots - Room Delta1 (δ 1)
12,20 – 13,30	Buffet lunch	
13,30 – 23,00	<i>Social program: visit to Aquileia and Gala Dinner</i>	

Thursday 13 September

8,00 – 17,00: trip to Venice (for accompanying persons only)

9,00 – 11,00	Special session: Model-based design and optimization-Room Gamma1(γ 1)
11,00 – 11,20	Coffee break
11,20 – 13,20	Session 8: Robot modeling - Room Gamma1 (γ 1)
13,20 – 14,20	Buffet lunch
14,20 - 16,20	Special session: Motion planning and operation of industrial robots - Room Gamma1 (γ 1)
16,20 – 16,30	Closing ceremony – Room Gamma1 (γ 1)

The registration desk will be open starting from Tuesday at 8:30

Tuesday 11 September

Session 1: Gripper mechanisms Chairs: Shaoping Bai, Erwin-Christian Lovasz Room Gamma1 (γ 1)	
10:50	<i>Dynamic study of an adaptive intelligent cervical brace model under actuation</i> Erwin-Christian Lovasz , Gruescu Corina, Ana-Maria Vutan, Dan Teodor Margineanu
11:10	<i>A gripper mechanism to automate overload process for fuel elements</i> Suleimen Kaimov , Aidarkhan Kaimov, Abylay Kaimov, Marco Ceccarelli, Talgat Kaiym, Gulnasia Kaimova et. Al.
11:30	<i>Underactuated Elements Design Criterion for Envelop Gripper Mechanism</i> Shuangji Yao , Marco Ceccarelli, Zhen Lu
11:50	<i>Dynamic modeling and experimental validation of a haptic finger based on a McKibben muscle</i> Walter Franco, Daniela Maffiodo, Carlo De Benedictis , Carlo Ferraresi
12:10	<i>Chopstick-type Gripper Mechanism for Meal-Assistance Robot Capable of Adapting to Size and Elasticity of Foods</i> Tomohiro Oka , Daisuke Matsuura, Yusuke Sugahara, Ann-Louise Lindborg, Jorge Solis, Yukio Takeda
12:30	<i>Busker Robot: a robotic painting system for rendering images into watercolour artworks</i> Lorenzo Scalera , Stefano Seriani, Alessandro Gasparetto, Paolo Gallina

Special Session: Human-safe robots and Mechanisms Chairs: Carl A. Nelson, Med Amine Laribi Room Delta1 (δ 1)	
10:50	<i>A Modular Cable-Driven Surgical Robot with a Safe Joint Design</i> Carl Nelson
11:10	<i>Kinematic Analysis of a 3-RRR Spherical Parallel Mechanism with configurable Base</i> Terence Essomba , Med Amine Laribi, Yang Hsu, Said Zeghloul
11:30	<i>Design of V2SOM: the safety mechanism for cobot's rotary joints</i> Younsse Ayoubi, Med Amine Laribi , Said Zeghloul, Marc Arsicault
11:50	<i>Real time redundancy-based approach to robot-patient safe enhancement: Application to Doppler sonography</i> Celestin Preault, Med Amine Laribi, Marc Arsicault, Said Zeghloul
12:10	<i>Design Process of a New Lighting Robotic Arm for Operating Room</i> Juan Sebastián Sandoval Arévalo, Laurence Nouaille, Gérard Poisson , Yves Parmantier, Benoit Magnain
12:30	<i>Towards a safe physical human-robot interaction for tele-operated system: application to Doppler sonography</i> Juan Sebastián Sandoval Arévalo , Med Amine Laribi, Said Zeghloul, Marc Arsicault

Session 3: Mechanisms Design I Chairs: Victor Petuya, Alba Perez Gracia Room Gamma1 (γ 1)	
14:50	<i>A Variable Stiffness Robotic Arm Using Linearly Actuated Compliant Parallel Guided Mechanism</i> Ruiqi Hu, Venkatasubramanian Kalpathy Venkiteswaran, Haijun Su
15:10	<i>Functional Design of a Biomimetic Flapper</i> Daniele Costa , Giacomo Palmieri, David Scaradozzi, Massimo Callegari
15:30	<i>Development of hand exoskeleton prototype for assisted rehabilitation.</i> Berith De la Cruz Sánchez , Manuel Arias Montiel, Esther Lugo-González
15:50	<i>A robot for welding inspection in offshore mooring chains</i> Alfonso Hernandez, Oscar Altuzarra, Victor Petuya , Charles Pinto, Enrique Amezua
16:10	<i>A Coupling Mechanism for Multi-Fingered Robotic Hands with Skew Axes</i> Taher Deemyad, Neda Hassanzadeh, Alba Perez Gracia

Session 4: Parallel robots Chairs: Yukio Takeda, Raffaele Di Gregorio Room Delta1 (δ 1)	
14:50	<i>Workspace Analysis and Dimensional Synthesis of the PRRS-RRC Shoeflies-Motion Generator</i> Henrique Simas, Raffaele Di Gregorio
15:10	<i>Unified Pose Parametrization for 1T2R Parallel Manipulators</i> Yuanqing Wu , Marco Carricato
15:30	<i>Redesign and Construction of a Low-Cost CaPaMan Prototype</i> Ozan Arslan , Sefiye Buse Karaahmet, Ozgün Selvi, Daniele Cafolla, Marco Ceccarelli
15:50	<i>Comparison of Workspace Analysis for Different Spherical Parallel Mechanisms</i> Divya Shah , Giorgio Metta, Alberto Parmiggiani
16:10	<i>A Simple and General Closed-form Method for Direct Kinematics of Mechanism Based on SOC Modeling</i> Huiping Shen , Ke Xu, Guanglei Wu, Ting-li Yang

Wednesday 12 September

Session 5: Mechanisms design II Chairs: Marco Ceccarelli, Manuel Arias-Montiel Room Gamma1 (γ 1)	
10:20	<i>Dynamic Modeling of Flexural Beams with Combined Loads in Compliant Mechanisms</i> Yue-Qing Yu , Qiping Xu
10:40	<i>A Tooth Profile Design Method for Harmonic Drive without Tip Interference</i> Huimin Dong , Zhang Jili, Delun Wang
11:00	<i>A Novel SMA Driven Compliant Rotary Actuator Based on Double Helical Structure</i> Rasheed Kittinanthapanya , Yusuke Sugahara, Daisuke Matsuura, Yukio Takeda
11:20	<i>Design and dynamic modeling of a novel single-wheel pendulum robot</i> Mario E. Herrera-Cordero, Manuel Arias-Montiel , Esther Lugo-González
11:40	<i>Hun Yi - a spherical pointing and measuring instrument invented in ancient China</i> Yingwei Guo , Zhijiang Xie, Shaoping Bai
12:00	<i>A proposed software framework for studying the grasp stability of underactuated fingers</i> Giulio Reina , Giovanni Antonio Zappatore, Arcangelo Messina

Session 6: Humanoid and special robots Chairs: José-Alfonso Pamanes, Paolo Gallina Room Delta1 (δ 1)	
10:20	<i>Development of LARMbot 2, a novel humanoid robot with parallel architectures</i> Matteo Russo , Daniele Cafolla, Marco Ceccarelli
10:40	<i>Development of a sensing system for zero gravity simulation using a robot manipulator to test antenna reflector unfolding in satellites</i> Simona D'Attanasio , Jerome Charron
11:00	<i>Preloaded structures for space exploration vehicles</i> Stefano Seriani , Lorenzo Scalera, Alessandro Gasparetto, Paolo Gallina
11:20	<i>Underactuated finger behavior correlation between vision system based experimental tests and multibody simulations</i> Chiara Cosenza, Vincenzo Niola , Sergio Savino
11:40	<i>Agri_q: Agriculture UGV for Monitoring and Drone Landing</i> Giuseppe Quaglia , Paride Cavallone, Carmen Visconte
12:00	<i>AXO-SUIT - a modular full-body exoskeleton for physical assistance</i> Simon Christensen, Shaoping Bai

Thursday 13 September

Special session: Model-based design and optimization Chairs: Rosario Sinatra, Erich Wehrle Room Gamma1 (γ 1)	
09:00	<i>A two-step algorithm for the dynamic reduction of flexible mechanisms</i> Alessandro Cammarata , Rosario Sinatra, Pietro Davide Maddio
09:20	<i>Preliminary investigation of static and dynamic properties of SLM lattice structures for robotic applications</i> Marco Sortino , Giovanni Totis, Federico Scalzo, Emanuele Vaglio
09:40	<i>A novel approach for antiresonance assignment in undamped vibrating systems</i> Roberto Belotti, Dario Richiedei, Iacopo Tamellin
10:00	<i>Application of a parametric modal analysis approach to flexible multibody systems</i> Ilaria Palomba , Renato Vidoni, Erich Wehrle
10:20	<i>In-operation structural modification of planetary gear sets using design optimization methods</i> Erich Wehrle , Iliara Palomba, Renato Vidoni
10:40	<i>Type synthesis of kinematically redundant parallel manipulators based on the HEXA parallel robot</i> Eduardo Castillo

Session 8: Robot modeling Chairs: Delun Wang, Renato Vidoni Room Gamma1 (γ 1)	
11:20	<i>A Novel Kinematic Model of Spatial Five-bar Linkage PPSPS for Testing Accuracy of Two-axis Moving Table with Ball-bar</i> Xiaopeng Li, Zhi Wang, Huimin Dong, Shudong Yu, Delun Wang
11:40	<i>Workspace and cuspidality analysis of a 2-X planar manipulator</i> Matthieu FURET, Philippe Wenger
12:00	<i>Geometric Loci for the Kinematic Analysis of Planar Mechanisms via the Instantaneous Geometric Invariants</i> Giorgio Figliolini , Lanni Chiara
12:20	<i>Homogenization of the Jacobian Matrix of Manipulators by Using Inertial Parameters</i> Jose-Alfonso Pamanes
12:40	<i>Synthesis of Cartesian manipulator of a class RoboMech</i> Zhumadil Baigunchekov , Myrzabay Izmambetov, Talgat Baigunchekov, Azamat Mustafa, Sayat Ibrayev, Batyr Naurushev

Special Session: Motion planning and operation of industrial robots

Chairs: Philippe Wenger, Paolo Boscariol

Room Gamma1 ($\gamma 1$)

14:20	<i>A look-ahead trajectory planning algorithm for spray painting robots with non-spherical wrists</i> Giulio Trigatti, Paolo Boscariol, Lorenzo Scalera , Daniele Pillan, Alessandro Gasparetto
14:40	<i>Performance evaluation of an LQG controller of a robotic link with fractional dampers based on their integer-order approximation</i> Daniele Casagrande, Wieslaw Krajewski, Umberto Viaro, Stefano Miani
15:00	<i>Energy saving in redundant robotic cells: optimal trajectory planning</i> Paolo Boscariol , Dario Richiedei
15:20	<i>A novel collision avoidance method for serial robots</i> Matteo Bottin , Giovanni Boschetti, Giulio Rosati
15:40	<i>Intuitive Hand Guidance of a Force-Controlled Sensitive Mobile Manipulator</i> Matthias Weyrer , Mathias Brandstötter, Damir Mirkovic
16:00	<i>A Fail-Safe Operation Strategy for LAWEX (LARM Wire driven EXercising device)</i> Giovanni Boschetti, Giuseppe Carbone, Chiara Passarini