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The 16th IFToMM World Congress (WC2023)

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# Tutorial

**Nov. 5, 2023**

**Lateral and torsional rotor dynamics in electromechanical applications**

9:30-15:30, 42F Musashi

**Simulation of Dynamics and Vibrations in Engines and Powertrains**

9:00-11:00, 42F Takao

**Mechanisms for Sustainable Energy Systems**

9:00-11:00, 42F Tama

**Machine Learning Driven Robot Motion Design and Implementation in a Web-based Mechanism Design Software**

13:00-16:00, 42F Takao

**Tribology**

13:00-15:00, 42F Tama

# Schedule

## At a glance

	Nov. 5 (Sun)			Nov. 6 (Mon)	Nov. 7 (Tue)	Nov. 8 (Wed)	Nov. 9 (Thu)
Room	Takao	Tama	Musashi	Eminence Hall, Takao, Tama, Musashi, Mitake, Tsukui, Sagami, Starlight, Moonlight, Comet, Subaru, Orion	Eminence Hall, Takao, Tama, Musashi, Mitake, Tsukui, Sagami, Starlight, Moonlight, Comet, Subaru, Orion	Eminence Hall, Takao, Tama, Musashi, Mitake, Tsukui, Sagami, Starlight, Moonlight, Comet, Orion	Eminence Hall, Takao, Tama, Musashi, Tsukui
8:00						<b>8:00-11:30 General Assembly (5F Eminence Hall)</b>	
9:00	Tut. Sim. of Dyn.	Tut. Mechanisms for Sust. Engy	Tut. Lateral & Torsional Rot. Dynamics in Electro-Mech. App.	9:30-10:00 Opening Ceremony (5F Eminence Hall)	9:00-10:40 Technical Sessions (7M1)		9:00-10:40 Technical Sessions (9M1)
10:00				10:00-11:00 Keynote: Challenges in tribology & future prospects (Eminence Hall)	Coffee Break		Coffee Break
11:00				Coffee Break	11:20-12:20 Keynote: Smart mobility changed by 5G/6G (Eminence Hall)	11:30-12:10 Special Talk: IFToMMists: who we are (Eminence Hall)	11:00-12:40 Technical Sessions (9M2)
12:00							
13:00	Tut. Machine Learning Driven Robot Motion Design	Tut. Tribology		13:20-15:00 Technical Sessions (6A1)	13:20-14:20 Keynote: Advances & Challenges for Task & Motion Planning (Eminence Hall)	13:20-15:00 Technical Sessions (8A1)	13:00-14:00 Closing / Farewell (5F Eminence Hall)
14:00					Coffee Break		
15:00				Coffee Break	15:00-16:20 Technical Sessions (7A1)	Coffee Break	
16:00				15:20-17:00 Technical Sessions (6A2)	Coffee Break	15:20-17:00 Technical Sessions (8A2)	
17:00					16:40-18:00 Technical Sessions (7A2)		
18:00	<b>18:00-20:00 Welcome Reception (5F Eminence Hall)</b>					<b>18:00-21:00 Banquet (Concord Ballroom)</b>	
19:00							
20:00							
21:00							

## **Nov. 6, 2023**

**Keynote** 10:00-11:00

Challenges in Tribology and Future Prospects

Prof. Dae-Eun Kim (Yonsei University, Korea)

**Keynote** 11:20-12:20

Smart Mobility Changed by 5G/6G

Prof. Kei Sakaguchi (Tokyo Institute of Technology, Japan)

**Session 6A1** 13:20-15:00

**Session 6A2** 15:20-17:00

## **Nov. 7, 2023**

**Session 7M1** 9:00-10:40

**Keynote** 11:20-12:20

Opportunities and Challenges in Adopting Electro-fuels for Sustainable Transport

Prof. Avinash Kumar Agarwal (Indian Institute of Technology Kanpur, India)

**Keynote** 13:20-14:20

Advances and Challenges for Task and Motion Planning: from Robotic Manipulators to Intelligent CAD to Analyzing Proteins

Prof. Nancy M. Amato (University of Illinois at Urbana-Champaign, USA)

**Session 7A1** 15:00-16:20

**Session 7A2** 16:40-18:00

## **Nov.8, 2023**

**Special talk** 11:30-12:10

IFToMMists: who we are

Prof. Marco Ceccarelli (University of Roma Tor Vergata, Italy)

**Session 8A1** 13:20-15:00

**Session 8A2** 15:20-17:00

## **Nov.9, 2023**

**Session 9M1** 9:00-10:40

**Session 9M2** 11:00-12:40

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# Session Program



	SF Eminence Hall	42F Fuji	42F Takao	42F Tama	42F Musashi	42F Mitate	42F Tsukui	42F Sagami	43F Starlight	43F Moonlight	43FComet	43F Subaru	43F Orion	
Nov. 5	8:00													
	9:00	Executive Council Meeting 8:30-17:00	TUTORIAL Simulation of Dynamics and Vibrations in Engines and Powertrains 9:00-11:00	TUTORIAL Mechanisms for Sustainable Energy Systems 9:00-11:00	TUTORIAL Lateral and torsional rotordynamics in electromechanical applications 9:30-15:30									
	11:00													
	12:00													
	13:00		TUTORIAL Machine Learning Driven Robot Motion Design and Implementation in a Web-based Mechanism Design Software 13:00-16:00	TUTORIAL Tribology 13:00-15:00										
	15:00													
	16:00													
	17:00													
	18:00	Welcome Reception 5F Eminence Hall												
	20:00													
9:30 Opening Ceremony 5F Eminence Hall														
10:00 Keynote: Challenges in Tribology and Future Prospects Prof. Dae-Eun Kim (Yonsei University, Korea) 5F Eminence Hall														
11:00 Coffee Break														
11:20 Keynote: Smart Mobility Changed by 5G/6G Prof. Kei Sakaguchi (Tokyo Institute of Technology, Japan) 5F Eminence Hall														
12:20														
Nov. 6	13:20	Linkages and Mechanical Controls (1)	Robotics and Mechatronics (1)	Robotics and Mechatronics (2)	Robotics and Mechatronics (3)	Robotics and Mechatronics (4)	Computational Kinematics (1)	Computational Kinematics (2)	Biomechanical Engineering (1)	Sustainable Energy Systems (1)	Gearing and Transmissions (1)	Multibody Dynamics (1)	Engines and Powertrains (1)	
	15:00		Coffee Break											
	15:20	Linkages and Mechanical Controls (2)	Robotics and Mechatronics (5)	Robotics and Mechatronics (6)	Robotics and Mechatronics (7)	Education in Mechanism and Machine Science (1)	Computational Kinematics (3)	Computational Kinematics (4)	Biomechanical Engineering (2)	Sustainable Energy Systems (2)	Gearing and Transmissions (2)	Multibody Dynamics (2)	Engines and Powertrains (2)	
17:00														
Nov. 7	9:00	Linkages and Mechanical Controls (3)	Robotics and Mechatronics (8)	Robotics and Mechatronics (9)	Robotics and Mechatronics (10)	Education in Mechanism and Machine Science (2)	Computational Kinematics (5)	Computational Kinematics (6)	Biomechanical Engineering (3)	Micromachines	Gearing and Transmissions (3)	Multibody Dynamics (3)		
	10:40		Coffee Break											
	11:20	Keynote: Opportunities and Challenges in Adopting Electro-fuels for Sustainable Transport, Prof. Avinash Kumar Agarwal (Indian Institute of Technology Kanpur, India) 5F Eminence Hall												
12:20														
Nov. 7	13:20	Keynote: Advances and Challenges for Task and Motion Planning: from Robotic Manipulators to Intelligent CAD to Analyzing Proteins Prof. Nancy M. Amato (University of Illinois at Urbana-Champaign, USA) 5F Eminence Hall												
	14:20	Coffee Break												
	15:00	Linkages and Mechanical Controls (4)	Robotics and Mechatronics (11)	Robotics and Mechatronics (12)	Robotics and Mechatronics (13)	History of Mechanism and Machine Science	Computational Kinematics (7)	Computational Kinematics (8)	Biomechanical Engineering (4)	Dynamics of Rotating Machines (1)	Gearing and Transmissions (4)	Multibody Dynamics (4)	Tribology (1)	
	16:20	Coffee Break												
16:40	Linkages and Mechanical Controls (5)	Robotics and Mechatronics (14)	Robotics and Mechatronics (15)	Robotics and Mechatronics (16)	Reliability		Computational Kinematics (9)	Biomechanical Engineering (5)		Gearing and Transmissions (5)				
18:00														
8:00 General Assembly 8:00-11:30														
11:30 Special talk: IFToMMists: who we are, Prof. Marco Ceccarelli (University of Roma Tor Vergata, Italy) 5F Eminence Hall														
12:10														
Nov. 8	13:20	Linkages and Mechanical Controls (6)	Robotics and Mechatronics (17)	Robotics and Mechatronics (18)	Robotics and Mechatronics (19)	Transportation Machinery (1)	Computational Kinematics (10)	Computational Kinematics (11)	Biomechanical Engineering (6)	Dynamics of Rotating Machines (2)	Gearing and Transmissions (6)		Tribology (2)	
	15:00		Coffee Break											
	15:20	Linkages and Mechanical Controls (7)	Robotics and Mechatronics (20)	Robotics and Mechatronics (21)	Robotics and Mechatronics (22)	Transportation Machinery (2)	Computational Kinematics (12)	Computational Kinematics (13)	Biomechanical Engineering (7)	Dynamics of Rotating Machines (3)	Vibrations		Tribology (3)	
	17:00													
18:00 Banquet 5F Concord Ballroom														
21:00														
Nov. 9	9:00	Linkages and Mechanical Controls (8)	Robotics and Mechatronics (23)	Robotics and Mechatronics (24)	Robotics and Mechatronics (25)		Computational Kinematics (14)							
	10:40		Coffee Break											
	11:00	Linkages and Mechanical Controls (9)	Robotics and Mechatronics (26)	Robotics and Mechatronics (27)	Robotics and Mechatronics (28)		Computational Kinematics (15)							
	12:40													
	13:00	Closing / Farewell 5F Eminence Hall												
14:00														
	SF Eminence Hall	42F Fuji	42F Takao	42F Tama	42F Musashi	42F Mitate	42F Tsukui	42F Sagami	43F Starlight	43F Moonlight	43FComet	43F Subaru	43F Orion	

## Nov. 6, Session 6A1, 13:20-15:00

Room1, Eminence Hall (5F) Chair: Chin-Hsing Kuo		Linkages and Mechanical Controls (1)
6A1 -011	N/A	
6A1 -012	<b>Atlas-Based Path Synthesis of Planar Four-bar Linkages Using Elliptical Fourier Descriptors</b> 13:40 <i>Yuan Chang, Jia-Ling Chang, Jyh-Jone Lee</i>	
6A1 -013	<b>Planar overconstrained mechanisms of the linkage and compliant type</b> 14:00 <i>Petru A. Simionescu</i>	
6A1 -014	<b>Design of Walking Rehabilitation Device using Planar Link Mechanism and Pneumatic Rubber Artificial Muscle</b> 14:20 <i>Jun Nango, Kotaro ENDO, Shota YAMAGUCHI, Takumi SATO, Hiroki Tomori</i>	
6A1 -015	<b>Conceptual Design and Static Calculation of 1-DOF Lifting Platform Mechanism</b> 14:40 <i>Zhongqiu Du, Jinshi Liu, Li Guoliang Li Guoliang, Huiping Shen</i>	

Room2, Takao (42F) Chair: Giuseppe Carbone		Robotics and Mechatronics (1)
6A1 -021	<b>A Novel Adaptive Prosthetic Finger Design with Scalability</b> 13:20 <i>Shao Liu, Jorge Angeles, Chao Chen</i>	
6A1 -022	<b>Design optimization of a tendon-driven continuum robot</b> 13:40 <i>Matteo Russo, Elie Gautreau, Amine Laribi</i>	
6A1 -023	<b>Characterization of Dielectric Elastomers by Finite Element Analysis</b> 14:00 <i>Tao Li, Jinbo Mei, Fan Zhang, marco Ceccarelli</i>	
6A1 -024	<b>Motion Analysis and Control of a Flexible Spatial Closed-loop Mechanism Made of a Certain Thin Elastic Plate</b> 14:20 <i>Nobuyuki Iwatsuki, Eiki Sawada, Jyun Igarashi, Ikuma Ikeda</i>	
6A1 -025	<b>A mixed direct/indirect method for generating energy-efficient motion laws for an inverted pendulum</b> 14:40 <i>Domenico Dona', Basilio Lenzo, Paolo Boscaroli, Giulio Rosati</i>	

Room3, Tama (42F) Chair: Shaoping Bai		Robotics and Mechatronics (2)
6A1 -031	<b>Design of an Adaptive Anthropomorphic Finger with Modular Soft Actuators</b> 13:20 <i>Sheng Guan Lin, Jen-Yuan Chang</i>	
6A1 -032	<b>Motion Characteristics Analysis of a Mecanum-Wheeled Omnidirectional Mobile Robot on a Slope</b> 13:40 <i>Tatsuro Terakawa, Mahiro Yogou, Masaharu Komori</i>	
6A1 -033	<b>Adaptive path planning for plume detection with an underwater glider</b> 14:00 <i>ZEFENG BAO, YUNFENG LI, XUSONG SHAO, ZHILIANG WU, QUNZHI LI</i>	
6A1 -034	<b>Design and Evaluation of A Novel Passive Shoulder Exoskeleton Based on VSM Torque Generator</b> 14:20 <i>Yu Zhu, Felix Baiser, Ming Shen, shaoping bai</i>	
6A1 -035	<b>Impulse-Driven Traveling Capsule Endoscope</b> 14:40 <i>Chihiro Katsuta, Takahiro Ito, Sunao Murakami, Hiroshi Ohtake, Kaoru Karasawa, Akane Tanaka, Toshihiro Kimura, Hiromu Kutsumi</i>	

Room4, Musashi (42F) Chair: Med Amine Laribi		Robotics and Mechatronics (3)
6A1 -041	<b>Kinematic Design and Analysis of a Wearable End-Effector Type Upper Limb Assistive Robot</b> 13:20 <i>Ryohei Morita, Ming Jiang, Andrea Botta, Yusuke Sugahara, Giuseppe Quaglia, marco Ceccarelli, Yukio Takeda</i>	
6A1 -042	<b>Analysis of the obstacle-crossing capability for a coupled parallelogram leg</b> 13:40 <i>Junpeng Chen, Yang Pan, Mi Li, Renjie Zhu, Meng Gao, Kun Wang, Xinyu Xiao, Lizi Deng, Dai Jian Sheng</i>	
6A1 -043	<b>Design of Expanding Segments Utilizing Developable Mechanisms in Continuum Robots</b> 14:00 <i>Muhammad Umer Khan Niazi, Usman Mehmood, Jaeseon Choi, Youngjin Moon</i>	
6A1 -044	<b>Dual-arm Constrained Manipulation Planning using Heuristic Search with Local Replanning</b> 14:20 <i>Audelia Gumarus Dharmawan, Gim Song Soh</i>	
6A1 -045	<b>Unfolded Paper Manipulation by a Robot Hand Using High-speed Image Processing</b> 14:40 <i>Hideto Okura, Shunsuke Komizunai, Taku Senoo, Atushi Konno</i>	

Room5, Mitake (42F) Chair: Daniela Maffiodo		Robotics and Mechatronics (4)
6A1 -051	N/A	
6A1 -052	<b>Proposal of a Mechanical Brake for Assist Suits Considering Safety and Energy Consumption</b> 13:40 <i>Yoshihiro Kai, Peiran Niu, Zixin Lin, Ryoto Nagata, Shoichi Hasegawa</i>	
6A1 -053	<b>Introduction of the Agonist-Antagonist Elasticity Around the Knee Joint of a Bio-inspired Legged Robot</b> 14:00 <i>Oscar Alam Guzman-Medrano</i>	
6A1 -054	<b>Semi Automatic Experimental System using Some Portable Robot Arms Collaborating with a Human</b> 14:20 <i>Koji Makino, Kazuyoshi Ishida, Xiao Sun, Hidetsugu Terada</i>	
6A1 -055	<b>Efficient walking of the quadruped using passive linear spring</b> 14:40 <i>Pramod Pal, Shishir Kolathaya, Ashitava Ghosal</i>	

Room6, Tsukui (42F) Chair: Volkert van der Wijk		Computational Kinematics (1)
6A1 -061	<b>Design of a three-chain 6-DOF symmetrical parallel mechanism and solutions of its forward and inverse kinematics</b> 13:20 <i>Zhongqiu Du, Ju Li, Haitao Liu, Yinan Zhao, Huiping Shen</i>	
6A1 -062	<b>Position Analysis of a Novel Family of three-legged 6-DOF Parallel Manipulators of type 3-XXRRU</b> 13:40 <i>Henrique Simas, Luan Meneghini, Raffaele Di Gregorio, Roberto Simoni</i>	
6A1 -063	<b>Synthesis of an SMA-actuated adjustable-magnitude compliant constant-force mechanism</b> 14:00 <i>Hao Xu, Xianmin Zhang, Rixin Wang, Junwen Liang, Junjie Du</i>	
6A1 -064	<b>A Novel Semi-analytical Algorithm for Forward Kinematics of 6-DOF Parallel Mechanisms</b> 14:20 <i>Pengda Ye, Jingjing You, Huiping Shen</i>	
6A1 -065	<b>Error parameters identification of a multi-DOF redundant parallel mechanism with joint clearances</b> 14:40 <i>Chendong Zeng, Zhi-cheng Qiu, Xian-min Zhang</i>	

Room7, Sagami (42F)		Chair: Marco Carricato	Computational Kinematics (2)
6A1 -071		N/A	
6A1 -072	13:40	<b>Topology optimization of a hybrid compliant gripper</b> <i>Shuhao Xia, Nianfeng Wang, Xianmin Zhang</i>	
6A1 -073	14:00	<b>Preliminary study on the applicability of parallel processing with Graphic Processing Units (GPU) for mechanism dynamics: The planar 4-bar case</b> <i>Louis Guigon, Benjamin Boudon, Andres Kecskemethy</i>	
6A1 -074	14:20	<b>Spherical Reconfigurable Linkage for the Control of Mechanism Center of Rotation</b> <i>Térence Essomba, Wen-Hsin Wang</i>	
6A1 -075	14:40	<b>Improving the Accuracy of Cable-Driven Parallel Robots through Model Optimization and Machine-Learning</b> <i>Marc Fabritius, Kraus, Andreas Pott</i>	

Room8, Starlight (43F)		Chair: Laura Gastaldi	Biomechanical Engineering (1)
6A1 -081		N/A	
6A1 -082	13:40	<b>Dynamic Model of a Macro Fiber Composite-Actuated Bio-inspired Robotic System</b> <i>Maira Martins da Silva, Arthur Silva Barbosa, Leopoldo Pisanelli Rodrigues de Oliveira</i>	
6A1 -083	14:00	<b>A Low-Cost System Concept for Initial Sonography Training</b> <i>Mykhailo Riabtsev, Med Amine Laribi, Eduardo Castillo, Jean-Michel Guilhem, Victor Petuya, Monica Urizar Arana, Said Zeghloul</i>	
6A1 -084	14:20	<b>Investigating the Impact of Multiple Tasks on the Estimation of Non-identifiable Muscle Parameters in Musculoskeletal Models : a preliminary study</b> <i>Yi-Hsuan Lin, Kuei-Yuan Chan</i>	
6A1 -085	14:40	<b>Development of Walking Assistance Devices Considering the Users' Psychological and Physical Status</b> <i>Eiichiro Tanaka, Keisuke Osawa, Jyun-Rong Zhuang, Xiuyuan Wu, Yifan Hua, Kei Nakagawa, Hee-hyol Lee, Louis Yuge</i>	

Room9, Moonlight (43F)		Chair: Moldovan Macedon	Sustainable Energy Systems (1)
6A1 -091		N/A	
6A1 -092	13:40	<b>Energy and exergy analysis of a roof-mounted photovoltaic system in Gebze-Turkey</b> <i>Seyed Hamed Pour Rahmati Khalejan, Tolga Cankurt, Can Dede</i>	
6A1 -093	14:00	<b>Towards Sustainable Forest Operations: Optimal Kinematic Design of a Forwarder Crane</b> <i>Omar Mendoza Trejo, Erick A. Padilla-García, Daniel Ortiz Morales, Ola Lindroos, Pedro La Hera</i>	
6A1 -094	14:20	<b>Design and Prototyping of BiSoft.Q, a 3-D Printed Bi-directional Deformable Actuator</b> <i>Giovanni Colucci, Simone Duretto, Giuseppe Quaglia</i>	
6A1 -095	14:40	<b>A Fully Enclosed Multi-mode Wave Energy Converter Based on Cable Parallel Mechanism</b> <i>Xinrui Lu, Yuan Chen</i>	

Room10, Comet (43F)		Chair: Yaping Zhao	Gearing and Transmissions (1)
6A1 -101	13:20	<b>Creation of an Adaptive Gear Variator (Stepless CVT) and Study of Its Quality Indicators</b> <i>Konstantin Ivanov</i>	
6A1 -102	13:40	<b>Tooth profile design theory of asymmetrical involute cylindrical worm in face worm gear drive</b> <i>Yaping Zhao, Yaoting Yu</i>	
6A1 -103	14:00	<b>Design of Reconfigurable Actuation in Tendon-Driven Robot Hands: Analysis of Potential and Challenges</b> <i>Daniel Gossen, David Bosen, Burkhard CORVES, Mathias Hüsing, Thomas Knobloch</i>	
6A1 -104	14:20	<b>Design and Efficiency Analysis of 3K Paradox Planetary Gear Drives</b> <i>Qi-You Zhuang, Shyi-Jeng Tsai</i>	
6A1 -105	14:40	<b>Gear tooth topology modification with considering honing wheel dressing in power gear honing</b> <i>Quoc-Duy Nguyen, Yu-Ren Wu</i>	

Room11, Subaru (43F)		Chair: Andres Kecskemethy	Multibody Dynamics (1)
6A1 -111		N/A	
6A1 -112	13:40	<b>Optimal Design and Landing Simulation of an Asteroid Probe with Variable Stiffness Legs</b> <i>Shiming Zhou, Haoran Yu, Yang Dong, Jianzhong Ding, Chunjie Wang</i>	
6A1 -113	14:00	<b>Dynamics Modeling of A Three-Drive Eccentric Pendulum Spherical Robot</b> <i>Minggang Li, Hanxu Sun, Long Ma</i>	
6A1 -114	14:20	<b>Nonsmooth Dynamics Modeling of Spatial Multibody Systems with Spherical Clearance Joints on the Special Euclidean Group</b> <i>Long Li, Xilun Ding, Shengnan Lyu</i>	
6A1 -115	14:40	<b>A Systematic Approach for Generating Efficient Inverse Dynamics of Moving Parallel Platforms: The Redundantly Actuated SO(3) Case</b> <i>Chiyu Sun, Andres Kecskemethy</i>	

Room12, Orion (43F)		Chair: Tigran Parikyan, Enrico Galvagno	Engines and Powertrains (1)
6A1 -121		N/A	
6A1 -122		N/A	
6A1 -123	14:00	<b>Electric Accessories for Hybrids and BEVs</b> <i>Madhusudan Raghavan, Norman Bucknor, Neeraj Shidore</i>	
6A1 -124	14:20	<b>Analysis of Dynamics and NVH of Electric Drive Unit using Frequency- and Time-Domain Solutions</b> <i>Klaus-Dieter Bauer, Josef Haslinger, Bianka Zinkiewicz, Johannes Steiner, Franz Diwoky, Martin Sopouch, Christoph Schweiger, Guenter Offner, Tigran Parikyan</i>	
6A1 -125	14:40	<b>Numerical Simulation and Emissions Performance of a Gasoline Compression Ignition Engine at High Idle and Low-Load Conditions</b> <i>Krishnamoorthi M, Avinash Kumar Agarwal</i>	

## Nov. 6, Session 6A2, 15:20-17:00

Room1, Eminence Hall (5F) Chair: Victor Petuya		Linkages and Mechanical Controls (2)
6A2 -011 15:20	<b>Function-based synthesis of combined mechanisms by clustering fine-grained function units in the form layer</b> <i>Yu-Tong Li, Yu-Xin Wang</i>	
6A2 -012 15:40	<b>A New Design Method for Thick-panel Origami</b> <i>Rui Peng, Gregory Scott Chirikjian</i>	
6A2 -013 16:00	<b>Analysis of Crank-Rocker Inflection Circle behavior at singularity poses</b> <i>Pranjali Deole, PRASHANT SHIWALKAR, J.P. Modak, S.D. Moghe</i>	
6A2 -014 16:20	<b>A Novel Mechanism for Rotational Variable Stiffness</b> <i>Carl Nelson</i>	
6A2 -015	N/A	

Room2, Takao (42F) Chair: Renato Vidoni		Robotics and Mechatronics (5)
6A2 -021 15:20	<b>A Gyrostabilizer Test Setup with Vessel Motion Capability about its Metacenter</b> <i>M. Riza Bozelli, Berk Kurt, Can Dede</i>	
6A2 -022 15:40	<b>Active Dynamic Balancing of Delta Robots</b> <i>Christian Mirz, Mathias Hüsing, Yukio Takeda, Burkhard CORVES</i>	
6A2 -023 16:00	<b>Optimization of the Flywheel of a Gyrostabilizer by Addressing "Fair" Performance Criteria</b> <i>Berk Kurt, M. Riza Bozelli, Can Dede</i>	
6A2 -024 16:20	<b>AI for Innovation Design of Tensegrity Mobile Robot</b> <i>Xincui Shi, Qi Yang, Binbin Lian, Tao Sun</i>	
6A2 -025 16:40	<b>Robust Position Control Through Variable Stiffness and Damping</b> <i>Donghwj Shin, Minno Lee, Sangheon Roh, Taegyun Kim</i>	

Room3, Tama (42F) Chair: Yusuke Sugahara, Kenji Hashimoto		Robotics and Mechatronics (6)
6A2 -031 15:20	<b>Design and characterization of a modular unit for a humanoid torso mechanism</b> <i>Wenshuo Gao, Matteo Russo, marco Ceccarelli</i>	
6A2 -032 15:40	<b>Stiffness Analysis of a Module-based Shape Morphing Snake-like Robot</b> <i>Alessandro Cammarata, Pietro Davide Maddio, Rosario Sinatra, Yingzhong Tian, Yinjun Zhao, Fengfeng Xi</i>	
6A2 -033 16:00	<b>Compact expressions of the singularity locus of optimal cable-suspended robots</b> <i>Pascal Dion-Gauvin, Clément Gosselin</i>	
6A2 -034 16:20	<b>Design and multi-objective optimization for a novel 7 DOF inchworm-like robot</b> <i>minglei zhu, Yanning Du, Min Xie, Jun Qi</i>	
6A2 -035 16:40	<b>Human-Robot Collaboration Based on Robot Motion Planning with Adaptive Obstacle Avoidance</b> <i>Hao Jian Eugene Tong, Brijesh Patel, Yan-Cen Lin, Zhi-Lin Zhang, Chao-Yi Lin, Chao-Lung Yang, Ching-Yuan Chang, Po Ting Lin</i>	

Room4, Musashi (42F) Chair: Sandipan Bandyopadhyay		Robotics and Mechatronics (7)
6A2 -041 15:20	<b>Steering transparency control of a wheelchair assistive device based on state estimator approach</b> <i>Valerio Cornagliotto, Michele Polito, Laura Gastaldi, Stefano Pastorelli</i>	
6A2 -042 15:40	<b>Experimental investigation of an assistive device for ankle motion using dummy robot</b> <i>Takamaru Saito, Ming Jiang, Yusuke Sugahara, marco Ceccarelli, Yukio Takeda</i>	
6A2 -043 16:00	<b>Fully End-to-End Visual Odometry of a Minidrone</b> <i>UTKARSH VATS, Shital S. Chiddarwar, Araveti Vinay</i>	
6A2 -044 16:20	<b>Disturbance propagation mitigation between a deployable miniature surgical robot and its insertion device</b> <i>Yukiko Tomooka, Murali Karnam, Manuela Eugster, Philippe C. Cattin, Georg Rauter</i>	
6A2 -045 16:40	<b>Tactile determination of the instantaneous screw axis of a human knee surrogate by a force-controlled robot using a Krylov method</b> <i>Alexander Hoffmann, Patrick Jendro, Andrés Kecskeméthy</i>	

Room5, Mitake (42F) Chair: Cristina Castejon		Education in Mechanism and Machine Science (1)
6A2 -051 15:20	<b>IDLE DEGREES OF FREEDOM AND EQUIVALENT MECHANISMS IN THE STUDY TOPIC OF STRUCTURAL ANALYSIS</b> <i>Eduard Krylov, Dmitrii Krylov, Sergey Deviatnikov, Roman Yurtikov</i>	
6A2 -052 15:40	<b>Behavior Control of Drone Triggered by Object Detection</b> <i>Mao Sekino, Satoshi Miura, Daisuke Matsuura, Harutake Nagai, Rikuya Fujimoto, Sogo Ito, Wataru Nakamura, Iori Tsuta, Toru Yagi</i>	
6A2 -053 16:00	<b>Reasoning about Perspectives in Mechatronic Engineering Education</b> <i>Pietro Fanghella, Luca Bruzzone, Matteo Verotti</i>	
6A2 -054 16:20	<b>Practices to Prototype Planar Link Mechanisms with 1 DOF for Elementary School, Junior High School and High School Students</b> <b>- A Leg Mechanism for Biped Walking Machines and a Dancing Mechanism -</b> <i>Nobuyuki Iwatsuki</i>	
6A2 -055 16:40	<b>Survey of Graphic Softwares for teaching Mechanism Synthesis using Path Curvature Theory</b> <i>Mohan Nagrurkar, P. S. Deole, Prashant Shiwalkar</i>	

Room6, Tsukui (42F) Chair: Lionel Birglen		Computational Kinematics (3)
6A2 -061 15:20	<b>A Novel Deployable Truss Grasping Manipulator with Adjustable Knuckle Length and Bilateral Curvature</b> <i>Qizhi Meng, Zheng Qiu, Ruijie Tang, Fugui Xie, Xin-Jun Liu</i>	
6A2 -062 15:40	<b>Structural Design and Static Analysis of a Cable-driven Underactuated Manipulator with Locking Devices</b> <i>Ruijie Tang, Qizhi Meng, Fugui Xie, Xin-Jun Liu, Jinsong Wang</i>	
6A2 -063 16:00	<b>Modeling and Design of a Bilaterally Statically Balanced Passive Exoskeleton</b> <i>André W. D. B. Victorette, Henrique Simas, Rodrigo de Souza Vieira, Esdras Salgado da Silva, Daniel Martins</i>	
6A2 -064 16:20	<b>On the Construction of Kinematic Confidence Ellipsoids for Uncertain Spatial Displacements</b> <i>Zihan Yu, Qiaode Ge, Mark Langer, Mona Arbab</i>	
6A2 -065	N/A	

<b>Room7, Sagami (42F)</b>		<b>Chair: Manfred Husty</b>	<b>Computational Kinematics (4)</b>
6A2 -071 15:20	<b>Genetic-algorithm-based pose design for soft magnetic origami robots</b> <i>Chaoyu Cui, Benliang Zhu, Rongzhou Lin, Junjie Du, Xianmin Zhang</i>		
6A2 -072 15:40	<b>On Ellipse Intersections by Means of Distance Geometry</b> <i>Bertold Bongardt, Federico Thomas</i>		
6A2 -073 16:00	<b>Representations of Higher-Order Kinematics with Hypercomplex Commutative Nilpotent Algebra</b> <i>Daniel Condurache, Doina PISLA</i>		
6A2 -074 16:20	<b>Dynamics of tensegrity structure with beams</b> <i>Jian Song, Heping Liu, ANI LUO</i>		
6A2 -075	N/A		

<b>Room8, Starlight (43F)</b>		<b>Chair: Laura Gastaldi</b>	<b>Biomechanical Engineering (2)</b>
6A2 -081 15:20	<b>Development of a Motion-Decoupled Exoskeleton Finger for Hand Rehabilitation Utilizing Double Arc-Slot and Four-Bar Mechanism</b> <i>Chen Zhi-Yong, Jen-Yuan Chang</i>		
6A2 -082 15:40	<b>Wearable Passive Cable-Driven Wrist Rehabilitation Robot: Design and Preliminary Experiments</b> <i>Andrea Botta, Giuseppe Quaglia, Yukio Takeda</i>		
6A2 -083 16:00	<b>Customization of 3D-printed hinged ankle-foot orthosis based on kinematic evaluation from motion capture</b> <i>Carlo De Benedictis, Maria Paterna, Alessia Dipalma, Martina Piazzolla, Daniela Maffiodo, Walter Franco, Carlo Ferraresi</i>		
6A2 -084 16:20	<b>Development of the Classification System for Surgical Skills in Endoscopic Sinus Surgery</b> <i>Kaito Yamada, Masanobu Suzuki, Kou Miyaji, Koki Ebina, Kazuya Sase, Teppei Tsujita, Xiaoshuai Chen, Takashige Abe, Shunsuke Komizunai, Yuji Nakamaru, Taku Senoo, Akihiro Homma, Atsushi Konno</i>		
6A2 -085	N/A		

<b>Room9, Moonlight (43F)</b>		<b>Chair: Quaglia Giuseppe</b>	<b>Sustainable Energy Systems (2)</b>
6A2 -091 15:20	<b>Sustainable Product Development through the Interdisciplinary Study Programme Engineering of Renewable Energy Systems</b> <i>Macedon MOLDOVAN, Ion VISA</i>		
6A2 -092 15:40	<b>Considerations on motion energy consumption for autonomous robots</b> <i>Rocco Galati, Giacomo Mantriota, Giulio Reina</i>		
6A2 -093 16:00	<b>Dynamic modeling and simulation of a counter-rotating wind system with 1-DOF planetary speed increaser</b> <i>Mircea Neagoe, Codruta Ileana Jaliu, Radu Gabriel Saulescu</i>		
6A2 -094 16:20	<b>"Kamirobo": A transdisciplinary research towards more sustainable robots</b> <i>Gentiane Venture, Yasutaka Tagawa, Ryota Kose, Chihiro Kayo, Itsuo Hanasaki</i>		
6A2 -095	N/A		

<b>Room10, Comet (43F)</b>		<b>Chair: Yaping Zha</b>	<b>Gearing and Transmissions (2)</b>
6A2 -101 15:20	<b>Face-Milling cutting Simulation of Bevel Gears Using Ring-Dexel Method</b> <i>Yi-Pei Shih, Bor-Tyng Sheen, Chuan-Feng Ting, Wen-Chien Chang, Jia-Liang Hong</i>		
6A2 -102 15:40	<b>Tooth profile calculation of a cylindrical gear pair to achieve a non-constant ratio</b> <i>Taiki Suwa, Daisuke Matsuura, Tsune Kobayashi</i>		
6A2 -103 16:00	<b>Effect of Operating Parameters on the Tribological Characteristics of 3D Printed Textured Journal Bearings</b> <i>Vishal Mourya, Skylab P. Bhore</i>		
6A2 -104 16:20	<b>Time-dependent errors influence on the transmission error in planetary gears with different mesh phasing</b> <i>Javier Sanchez-Espiga, Marius Fürst, Alfonso Fernandez-del-Rincon, Michael Otto, Fernando Viadero, Karsten Stahl</i>		
6A2 -105	N/A		

<b>Room11, Subaru (43F)</b>		<b>Chair: Takashi Harada</b>	<b>Multibody Dynamics (2)</b>
6A2 -111 15:20	<b>Experimental analysis and multibody simulation of electric kick scooter braking maneuver</b> <i>Angelo Domenico Vella, Elisa Digo, Alessandro Vigliani</i>		
6A2 -112 15:40	<b>Explicit higher-order integrator for Multibody Dynamics</b> <i>Gorka Urkullu, Igor Fernández de Bustos, Ibai Coria, Haritz Uriarte</i>		
6A2 -113 16:00	<b>Implementation of the crane vessel interactive control using the constraint-based flexible cable with a variable length</b> <i>Oleg Makarov, Hayato Yase, Takashi Harada</i>		
6A2 -114 16:20	<b>On Actual Motion of Planar Closed-Chain Five-Bar Underactuated Mechanism at Given Position</b> <i>jin xie, ZHAOHUI LIU</i>		
6A2 -115	N/A		

<b>Room12, Orion (43F)</b>		<b>Chair: Tigra Parikyan, Madhusudan Raghavan</b>	<b>Engines and Powertrains (2)</b>
6A2 -121 15:20	<b>Hybrid electric vehicle platoon control and optimal energy management system for fuel economy, safety, and dynamic performance</b> <i>Enrico Galvagno, Luciano Rolando, Luca Pulvirenti, Luca Zerbato, Luigi Tresca</i>		
6A2 -122 15:40	<b>Task-Based Conceptual and Physical Design of a Gear Chamfering Mechanism</b> <i>Hrayr Darbinyan</i>		
6A2 -123 16:00	<b>Comparative Combustion Characteristics of a Dimethyl Ether (DME) and Diesel Fueled Engines</b> <i>Shanti Mehra, Hardik Valera, Vikram Kumar, Avinash Kumar Agarwal</i>		
6A2 -124	N/A		
6A2 -125	N/A		

## Nov. 7, Session 7M1, 9:00-10:40

Room1, Eminence Hall (5F) Chair: Burkhard Corves		Linkages and Mechanical Controls (3)
7M1-011	N/A	
7M1-012	<b>Four-Bar Function Generation Using Excel Solver</b> 9:20 <i>Eres Söylemez, Kiper Gokhan</i>	
7M1-013	<b>Anticipating application of Machine Learning techniques for effective synthesis of Straight-Line Crank Rocker</b> 9:40 <i>PRASHANT SHIWALKAR, J. P. MODAK, marco Ceccarelli</i>	
7M1-014	<b>Error analysis of a deployable scissor-like mechanism with joint clearances</b> 10:00 <i>Hang Xiao, Jianzhi Wang, Xilun Ding, Shengnan Lyu</i>	
7M1-015	<b>Studies on Synthesis of Symmetrical Coupler Curves having Ball's Points</b> 10:20 <i>Rama Krishna K, Kripa Sanker Tripathi</i>	

Room2, Takao (42F) Chair: Giuseppe Quaglia		Robotics and Mechatronics (8)
7M1-021	N/A	
7M1-022	<b>Dynamics and computed torque control stability of an under-actuated tendon-driven manipulator</b> 9:20 <i>Nicolas Testard, Christine Chevallereau, Philippe Wenger</i>	
7M1-023	<b>A novel class of geared manipulators of the SCARA type</b> 9:40 <i>Petru A. Simionescu</i>	
7M1-024	<b>The Motion Suspension System – MSS: A Cable-Driven System for On-Ground Tests of Space Robots</b> 10:00 <i>Ferdinand Elhardt, Roland Boumann, Marco De Stefano, Robin Heidel, Patrik Lemmen, Martin Heumos, Christoph Jeziorek, Maximo Roa, Manfred Schedl, Tobias Bruckmann</i>	
7M1-025	<b>Performance evaluation of a miniaturized leg-swing actuator using electrostatic zipping</b> 10:20 <i>Yusuke Seki, Shunsuke Yoshimoto, Akio Yamamoto</i>	

Room3, Tama (42F) Chair: Terence Essomba		Robotics and Mechatronics (9)
7M1-031	N/A	
7M1-032	<b>Physical Human-Robot Interaction Performance Optimization of an Exosuit for Assistance</b> 9:20 <i>Yaodong LU, Yannick Aoustin, Vigen Arakelyan</i>	
7M1-033	<b>Analysis and Design of a Suspended Cable-Driven Parallel Robot for Educational Process</b> 9:40 <i>Assylbek Jomartov, Amandyk Tuleshov, Aziz Kamal, Azizbek Abduraimov, Zair Ualiyev</i>	
7M1-034	<b>Analysis and Recognition of Human Postures for Robotic Applications</b> 10:00 <i>Teresa Zielinska</i>	
7M1-035	<b>Body Gesture Recognition for Collaborative Robots</b> 10:20 <i>Jorge Solis, Koyu Nakamori, Gustavo Alfonso Garcia Ricardez, Johan Håkansson</i>	

Room4, Musashi (42F) Chair: Daniele Cafolla		Robotics and Mechatronics (10)
7M1-041	N/A	
7M1-042	<b>Redundantly Actuated 5-DOF Delta-type Parallel Robot with Linear Drives</b> 9:20 <i>Pavel Laryushkin, Alexey Fomin, Victor Glazunov, Ilya Brem, Oxana Fomina</i>	
7M1-043	<b>Trajectory Tracking Control of 3-RPS Parallel Mechanism Based on Udwadia-Kalaba Equation</b> 9:40 <i>Duanling Li, Xiaoqin Yin, Yongkang Wei, J. M. McCarthy, Xianwen Kong</i>	
7M1-044	<b>Universal Configurable Navigation and Control System for Industrial Unmanned Ground Vehicles with Differential Chassis</b> 10:00 <i>Andrey Vukolov, George Kourousias, Francesco Guzzi, Roberto Pugliese</i>	
7M1-045	<b>An interactive collaborative robotic system to play Italian checkers</b> 10:20 <i>Giuliano Fabris, Lorenzo Scalera, Alessandro Gasparetto</i>	

Room5, Mitake (42F) Chair: Eduard Krylov		Education in Mechanism and Machine Science (2)
7M1-051	N/A	
7M1-052	<b>Multilevel dissemination of knowledge on machine diagnostics</b> 9:20 <i>CRISTINA CASTEJON SISAMON, M. Jesus Gomez-Garcia, Marta Zamorano, Higinio Rubio</i>	
7M1-053	<b>Design and Simulation of an Inspection Rover for the Survey of Historical and Monumental Sites</b> 9:40 <i>Erika Ottaviano, Pierluigi Rea, Lorenzo Miele, Andrea Palma</i>	
7M1-054	<b>Popularizing the Field of Mechanisms and Machine Theory through Student Projects: Preservation of the Petrovaradin Fortress Clocktower Mechanism</b> 10:00 <i>Dijana Čavić, Srdjan Nikacević, Sonja Balać, Maja Čavić</i>	
7M1-055	<b>Virtual and Physical Components to Build Modular Robotic Arms for Effective Understanding of Denavit-Hartenberg (DH) Parameters</b> 10:20 <i>Manjunath Sakthivel, Ashwin S. Kumar, Gaurav Shankar, Rajeevlochana Chittawadigi</i>	

Room6, Tsukui (42F) Chair: Sandipan Bandyopadhyay		Computational Kinematics (5)
7M1-061	N/A	
7M1-062	<b>Kinetostatic Modeling of a 5-DOF Hybrid Robot Considering the Gravitational Effect</b> 9:20 <i>Wei Yue, Haitao Liu, Shaofei Meng, Yujie Bai, Guangxi Li, Yongbin Song</i>	
7M1-063	<b>Irregular-shaped Torsion Spring Design for Gravity Compensation in Linkage Systems: A Modified CPRBM Based Methodology</b> 9:40 <i>ZEXIN SHAN, Hiroshi Nakamura, Shimpei Tanaka, Mitsuru ENDO</i>	
7M1-064	<b>Design of a novel compact piezo-actuated 2-DOF nano-positioning stage using the five-bar displacement amplification mechanism</b> 10:00 <i>Jianhao Lai, Xianmin Zhang, Lei Yuan, Mingxiang Ling, Junwen Liang, Longhuan Yu, Benliang Zhu, Hai Li, Lixin Yang</i>	
7M1-065	<b>A Topology Optimization Method to Synthesize Geometrically Nonlinear Compliant Constant-Force Mechanisms</b> 10:20 <i>Chih-Hsing Liu, Ta-Lun Chen, Fu-Ming Chung, Mao-Cheng Hsu</i>	

<b>Room7, Sagami (42F)</b>		<b>Chair: Pierre Larochelle</b>	<b>Computational Kinematics (6)</b>
7M1-071	N/A		
7M1-072 9:20	<b>Design and Validation of a 3-DoF Ungrounded Wrist Perturbator Based on an Inverted Spatial 4-RUU Parallel Mechanism</b> <i>Robbert Koene, Jaap Meijaard, Winfred Mugge, V. Van der Wijk</i>		
7M1-073 9:40	<b>Comparison of Two 6-DOF Parallel Mechanisms Based on Kinematic Models</b> <i>Hongye Wu, Haitao Liu, Wei Yue, Jiale HAN, Wei MA, Junfu Zhou, Cheng Hongfei</i>		
7M1-074 10:00	<b>A Novel Family of 2T2R Parallel Manipulators with Potential for Balance Rehabilitation</b> <i>Paul Diego, Erik Macho, Saioa Herrero Villalibre, Javier Corral, Mikel Diez, Francisco J. Campa, Charles Pinto</i>		
7M1-075 10:20	<b>Metamorphic Cam Mechanism with a PR follower</b> <i>Tung-Hsin Pan, Kuan-Lun Hsu</i>		

<b>Room8, Starlight (43F)</b>		<b>Chair: Daniela Maffiodo</b>	<b>Biomechanical Engineering (3)</b>
7M1-081	N/A		
7M1-082 9:20	<b>Development of a Path-to-Follow Nozzle for Ultraviolet-Assisted Three-Dimensional Bioprinting Technology</b> <i>Chao-Yaug Liao, Fang-Ru Shen, Shan-hui Hsu</i>		
7M1-083 9:40	<b>Finite Element Analysis of Contact Stresses in Knee -Prosthesis with Antero-Posterior Tibial Slope</b> <i>Daniela Tarnita, Nicolae Dumitru, Dan Calafeteanu, Dan B. Marghitu, Ilie Dumitru, Ionut Daniel Geonea, Gabriela Marinache, Diana Prunoiu, Danut-Nicolae Tarnita</i>		
7M1-084 10:00	<b>Nordic Walking Simulation Research</b> <i>Jacek Bałchanowski, Sławomir Wudarczyk, Artur Handke</i>		
7M1-085 10:20	<b>Development of Soft Gears Made of Edible Gummies for Self-Propelled Endoluminal Robot</b> <i>Keisuke Osawa, Kaiwen Duan, Eiichiro Tanaka</i>		

<b>Room9, Moonlight (43F)</b>		<b>Chair: Lena Zentner</b>	<b>Micromachines</b>
7M1-091	N/A		
7M1-092 9:20	<b>Optimum Design of Compliant Nonlinear Torsional Springs Through Parametric Finite Element Analysis</b> <i>Yotsathorn Napawan, Chin-Hsing Kuo, Buyung Kosasih</i>		
7M1-093 9:40	<b>An analytical approach for calculating the first natural frequency of flexure hinges with variable cross-sections</b> <i>Vivien Platl, Lena Zentner</i>		
7M1-094 10:00	<b>A Compact Spatial Pose Adjustment Mechanism Driving by Stick-Slip</b> <i>Aoyang li, Hai Li, Xianmin Zhang, Yuge Liu</i>		
7M1-095 10:20	<b>Analytical description of transversally symmetric hinges with semicircular contours</b> <i>Hannes Jahn, Thomas Fröhlich, Lena Zentner</i>		

<b>Room10, Comet (43F)</b>		<b>Chair: Yaping Zha</b>	<b>Gearing and Transmissions (3)</b>
7M1-101	N/A		
7M1-102 9:20	<b>Kinematic Characteristics Analysis of Gear Teeth in Harmonic Drive</b> <i>Guocheng Zhou, Ran Xie, Heyu Liu, Yuhu Yang</i>		
7M1-103 9:40	<b>Load sharing in planetary transmissions affected by eccentricity and index errors in the sun</b> <i>J. Sanchez-Espiga, A. Fernández-del-Rincón, M. Iglesias, A. De-Juan, P. García, F. Viadero</i>		
7M1-104 10:00	<b>Synthesis of Contact in Loaded Multi-Pair Gears with a Big Contact Ratio</b> <i>Evgeniy Trubachev</i>		
7M1-105 10:20	<b>Effect of Wave Generator Misalignment on the Strain Wave Gear Hysteretic Behavior in a Rotary Electro-Mechanical Actuator</b> <i>Roberto Guida, Antonio Carlo Bertolino, Andrea De Martin, Stefano Mauro, Massimo Sorli</i>		

<b>Room11, Subaru (43F)</b>		<b>Chair: Yu-Xin Wang, Anirvan DasGupta</b>	<b>Multibody Dynamics (3)</b>
7M1-111	N/A		
7M1-112 9:20	<b>A Study on a Method for Maintaining Contact During Capture of Space Debris with an MR Damper</b> <i>Ryogo Mizuno, Satoko Abiko, Teppei Tsujita</i>		
7M1-113 9:40	<b>Effects of kinematic parameters on PM's motion stability at singular configurations</b> <i>Yu-Tong Li, Yu-Xin Wang</i>		
7M1-114 10:00	<b>Coupled Dynamics of an Oscillator Moving in Contact with a Periodically Supported String on Foundation</b> <i>Anirvan DasGupta</i>		
7M1-115 10:20	<b>Dynamic Stability Analysis of an Electric Rope Shovel</b> <i>Souvik Basak, Anirvan DasGupta</i>		

## Nov. 7, Session 7A1, 15:00-16:20

Room1, Eminence Hall (5F) Chair: Erwin Lovasz		Linkages and Mechanical Controls (4)
7A1 -011 15:00	<b>Triple cam mechanism for compensating drive torque</b> <i>Miroslav Václavík, Petr Jirásko, Jan Bělik</i>	
7A1 -012 15:20	<b>Design of a Mechanical Locking Hook with a Memory Mechanism for Carrying Robots in Nuclear Power Plant Decommissioning</b> <i>Naoto Kimura, Shigeo Hirose</i>	
7A1 -013 15:40	<b>Design, Mobility and Kinematic Analysis of a 4R1H Mechanism</b> <i>Alexey Fomin, Anton Antonov, Victor Glazunov, Gleb Filippov</i>	
7A1 -014 16:00	<b>An Isotropy Optimized Linkage Under-Actuated Finger</b> <i>rany rizk</i>	

Room2, Takao (42F) Chair: Burkhard Corves		Robotics and Mechatronics (11)
7A1 -021 15:00	<b>Optimal Synthesis and Experimental Validation of a Bio-inspired Variable Stiffness Universal Compliant Joint for Continuum Robots</b> <i>Elie Gautreau, Xavier Bonnet, Amine Laribi</i>	
7A1 -022 15:20	<b>Design and Optimization of A Novel Flexible Spherical-hinged Joint for Continuum Robots</b> <i>Guoxin Li, Jingjun Yu, xu pei</i>	
7A1 -023 15:40	<b>Design of an Industrial-Grade Leg for a Quadruped Robot</b> <i>Bartomeu Costa Prats, Roberto Carta, Alba Perez Gracia, Carles Domenech Mestres</i>	
7A1 -024 16:00	<b>Total Least Squares in-field Identification for MEMS-based Triaxial Accelerometers</b> <i>Massimo Duchi, Federico Zaccaria, Sebastien Briot, Edoardo Idà</i>	

Room3, Tama (42F) Chair: Mathias Hüsing		Robotics and Mechatronics (12)
7A1 -031 15:00	<b>Design of a hybrid suspended cable and thruster driven parallel robot using hexarotor</b> <i>Yifan Feng, Yusuke Sugahara, Ming Jiang, Marco Ceccarelli, Yukio Takeda</i>	
7A1 -032 15:20	<b>Demo Prototype of TORVEASTRO Robot and Its Testing</b> <i>Jorge Enrique Araque Isidro, Daniele Cafolla, Matteo Russo, marco Ceccarelli</i>	
7A1 -033 15:40	<b>Obtaining desired shapes of cable-driven continuum robots using general cable routing</b> <i>Soumya Kanti Mahapatra, Ashitava Ghosal</i>	
7A1 -034 16:00	<b>Stem detection using depth camera in red perilla farm</b> <i>Seito Takeuchi, Shunsuke Komizunai, Taku Senoo, Atushi Konno</i>	

Room4, Musashi (42F) Chair: Basilio Lenzo		Robotics and Mechatronics (13)
7A1 -041 15:00	<b>Flexible hinge-based antenna pointing mechanism</b> <i>Sachin Barthwal, Manish Tripathi, Ashitava Ghosal</i>	
7A1 -042 15:20	<b>Design of the Robust Force Controller based on Disturbance Observer and Reaction Force Observer using Coefficient Diagram Method</b> <i>Han-Hao Tsai, Jen-Yuan Chang</i>	
7A1 -043 15:40	<b>On the design of MoviWE.Q: an omnidirectional electric-powered wheelchair for indoor mobility</b> <i>Luigi Tagliavini, Giuseppe Quaglia</i>	
7A1 -044 16:00	<b>Machine Learning Aided Self-Calibration Schemes for Parallel Kinematic Manipulators</b> <i>Yu-Jen Chiu, Wei-Hsuan Lin, Cheng-Kuo Sung, Syanala Jaya Prakash Reddy</i>	

Room5, Mitake (42F) Chair: Alessandro Gasparetto		History of Mechanism and Machine Science
7A1 -051 15:00	<b>Reconstruction of the Tea-serving Automaton in the Ancient Japanese Book "Karakuri Zui"</b> <i>Cheng-En Chai, Ling-Ling Chen, Yu-Hsun Chen, Kuo-Hung Hsiao, Jian-Liang Lin, Hong-Sen Yan</i>	
7A1 -052 15:20	<b>Evolution of rolling bearing technology</b> <i>Higinio Rubio, Alejandro Bustos Caballero, CRISTINA CASTEJON SISAMON, Juan Carlos Garcia-Prada</i>	
7A1 -053 15:40	<b>On the History of Early Automobile Suspension Systems</b> <i>Petru A. Simionescu, Robert L. Norton</i>	
7A1 -054 16:00	<b>Ferdinand Freudenstein's Spatial Kinematics</b> <i>Pierre Larochelle</i>	

Room6, Tsukui (42F) Chair: Andreas Müller		Computational Kinematics (7)
7A1 -061 15:00	<b>Parasitic Motions of a Delta Parallel Continuum Robot</b> <i>Oscar Altuzarra, Monica Urizar, Alfonso Hernández, Enrique Amezua</i>	
7A1 -062 15:20	<b>A Task Scheduling Method for Multi-robot Collaboration</b> <i>Wanxin Wen, Haitao Liu, Yanbing Ni, Qingpo Xu, Yugeng Huang, Ye Wei, Zhongxia Xiang, Jinrong Wu</i>	
7A1 -063 15:40	<b>An Overconstrained Vertical Darboux Mechanism</b> <i>Martin Pfurner, Johannes Siegele</i>	
7A1 -064 16:00	<b>Multiple solutions of direct kinematics of 3-RPR parallel manipulators</b> <i>Manfred Husty</i>	



<b>Room7, Sagami (42F)</b>		<b>Chair: Chin-Hsing Kuo</b>	<b>Computational Kinematics (8)</b>
7A1 -071 15:00	<b>Isometrically deformable cones and cylinders carrying planar curves</b> <i>Georg Nawratil</i>		
7A1 -072 15:20	<b>Kinematic Analysis of a Biocompatible Lower Limb Model</b> <i>Lionel Birglen, Clement Hely</i>		
7A1 -073 15:40	<b>Structural-Parametric Synthesis of Path Generating Mechanisms</b> <i>Zhumadil Baigunchekov, Med Amine Laribi, Carbone Giuseppe, ZHANG DONG, Rustem Kaiyrov</i>		
7A1 -074 16:00	<b>Geometric Interpolation of Rigid Body Motions</b> <i>Andreas Mueller</i>		

<b>Room8, Starlight (43F)</b>		<b>Chair: Med Amine Laribi</b>	<b>Biomechanical Engineering (4)</b>
7A1 -081	N/A		
7A1 -082 15:20	<b>Design Optimization of RAISE Parallel Robot for Lower Limb Rehabilitation</b> <i>Andrei Caprariu, Paul Tucan, Calin Vaida, Adrian Pislă, Bogdan Gherman, Doina PISLA</i>		
7A1 -083 15:40	<b>Development of surgical simulator providing force feedback from organs</b> <i>Ryo Sekine, Satoshi Miura</i>		
7A1 -084 16:00	<b>Soft robot for Cell Culture with Multi-directional Mechanical Stretches</b> <i>Atsushi Takata, Takayoshi Kamada, Yuta Kurashina</i>		

<b>Room9, Moonlight (43F)</b>		<b>Chair: Paolo Pennacchi, Jaroslav Zapoměl</b>	<b>Dynamics of Rotating Machines (1)</b>
7A1 -091	N/A		
7A1 -092 15:20	<b>The Sommerfeld Effect in a Non-ideal Anisotropic Gyroscopic Rotor System and the Effect of Nonlinear Damping</b> <i>Zharilkassin Iskakov, Aziz Kamal, Azizbek Abduraimov, Bolat Makhmutov</i>		
7A1 -093 15:40	<b>Analysis of Levitated Flywheels Mounted in Superconducting Bearings</b> <i>Jaroslav Zapoměl, Jan Koláček, Jan Kozánek, Jan Košina</i>		
7A1 -094 16:00	<b>Prediction of Instability in Rotating Shaft System with Casing by Operational Modal Analysis</b> <i>Daiki Goto, Tsuyoshi Inoue, Shogo Kimura, Akira Heya, Shinsaku Nakamura, Yusuke Watanabe</i>		

<b>Room10, Comet (43F)</b>		<b>Chair: Frank Schäf and Yi-Cheng Chen</b>	<b>Gearing and Transmissions (4)</b>
7A1 -101	N/A		
7A1 -102 15:20	<b>Tooth Flank Modification of Line Contact Spiral Bevel Gears</b> <i>Mingyang Wang, Shuwen Li, Yuehai Sun</i>		
7A1 -103 15:40	<b>Designing a Spur Shaper Cutter for a Non-Involute Circular Spline</b> <i>Yun-Hao Cheng, Yi-Cheng Chen</i>		
7A1 -104 16:00	<b>Effect of a blocked recirculation channel on the performance of a not preloaded ball screw with compliant minimal constraints</b> <i>Antonio Carlo Bertolino, Roberto Guida, Andrea De Martin, Stefano Mauro, Massimo Sori</i>		

<b>Room11, Subaru (43F)</b>		<b>Chair: CRISTINA CASTEJON SISAMON</b>	<b>Multibody Dynamics (4)</b>
7A1 -111	N/A		
7A1 -112 15:20	<b>Newton-Euler Dynamics for a 3-UPU Parallel Robot in Screw coordinates</b> <i>Jing-Shan Zhao</i>		
7A1 -113 15:40	<b>Spatial Modelling of Deep Groove Ball Bearings Using Smooth Contact Formulation</b> <i>Raúl Gismeros Moreno, Filipe Marques, Eduardo Corral Abad, Jesús Meneses Alonso, Paulo Flores, CRISTINA CASTEJON SISAMON</i>		
7A1 -114 16:00	<b>Friction-induced redundancy of constraints and its consequences</b> <i>Marek Wojtyra, Janusz Frączek</i>		

<b>Room12, Orion (43F)</b>		<b>Chair: Noritsugu Umehara</b>	<b>Tribology (1)</b>
7A1 -121 15:00	<b>The effect of graphite domain direction on the friction coefficient of diamond-like carbon measured by polarized Raman analysis</b> <i>Takayuki Tokoroyama, Chiro Fujiwara, Noritsugu Umehara</i>		
7A1 -122 15:20	<b>Wear stage judgment and wear failure prediction based on dissipative theory of wear</b> <i>Haoran Liao, Ying Liu, Hongju Li, Zhao Xiang</i>		
7A1 -123 15:40	<b>Investigation of Tribological Properties of Carbon Coatings Deposited on Polymer Substrate</b> <i>Youn-Hoo Hwang, YouJin Min, Dae-Eun Kim</i>		
7A1 -124 16:00	<b>A Wear Depth Characterization Method Based on Fractal Order Taylor Expansion of Measured Normal Displacements</b> <i>Hongju Li, Ying Liu, Haoran Liao</i>		

## Nov. 7, Session 7A2, 16:40-18:00

Room1, Eminence Hall (5F) Chair: Can Dede		Linkages and Mechanical Controls (5)
7A2 -011 16:40	<b>A Design Concept of Linear-Type Gravity Compensation Using Permanent-Magnet Arrays</b> <i>Xiangxian Zeng, Chin-Hsing Kuo, Emre Sariyildiz</i>	
7A2 -012 17:00	<b>Analytical Synthesis of Five-Bar Linkage 5-PRRRP</b> <i>Denjen Tivadar, Alexandru Darcea, marco Ceccarelli, Erwin-Christian Lovasz, Dorel Buncianu, Dan-Cristian Silaghi-Perju</i>	
7A2 -013 17:20	<b>Contributions to the Geometric Synthesis of the Windshield Wiper Mechanism with Rocker-Slider Blade</b> <i>Ovidiu Antonescu, Dana Valeanu, Daniela Antonescu, Margareta Srimbeanu</i>	
7A2 -014	N/A	

Room2, Takao (42F) Chair: Marco Ceccarelli		Robotics and Mechatronics (14)
7A2 -021 16:40	<b>An Inflatable 7-DOF Space Robotic Arm for Active Debris Removal</b> <i>Pierpaolo Palmieri, Mario Troise, Laura Salamina, Matteo Gaidano, Matteo Melchiorre, Stefano Mauro</i>	
7A2 -022 17:00	<b>Bio-inspired design of a soft bending actuator for flexion of a human index finger: a case study</b> <i>J. German Cortes-Gonzalez, Yamile Sandoval, Maximiano F. Ruiz-Torres, Eduardo Castillo</i>	
7A2 -023 17:20	<b>A kirigami-like soft elastomeric skin: design and influence evaluation in the mobility of a bio-inspired snake-arm robot</b> <i>Yamile Sandoval, Diego E. Martinez-Sanchez, J. German Cortes-Gonzalez, Eduardo Castillo, Amine Laribi, Elie Gautreau</i>	
7A2 -024	N/A	

Room3, Tama (42F) Chair: Clément Gosselin		Robotics and Mechatronics (15)
7A2 -031 16:40	<b>Application of the «bang-bang» law in robot manipulators for the reduction of inertial forces and input torques</b> <i>Vigen Arakelyan, Yaodong LU, Jing Geng</i>	
7A2 -032 17:00	<b>A Dual-Arm Nasopharyngeal Swab Manipulation Robot for Polymerization Chain Reaction Sampling</b> <i>Tianwei Zhang, Shipai Zheng, Cong Liu, Yiming Yang, Zhenglong Sun, Tin Lun Lam</i>	
7A2 -033 17:20	<b>Vacuum-powered and fabric-based soft actuator</b> <i>Lola Courty, Kenjiro Takemura</i>	
7A2 -034	N/A	

Room4, Musashi (42F) Chair: Daniele Cafolla		Robotics and Mechatronics (16)
7A2 -041 16:40	<b>Acceleration of Direct Optimal Control and Cost Weight Vector Estimation using Machine Learning</b> <i>Shoma Nakatani</i>	
7A2 -042 17:00	<b>Obstacle Avoidance of a Serial Collaborative Robot Using Impedance Control</b> <i>Pietro Davide Maddio, Rosario Sinatra, Alessandro Cammarata</i>	
7A2 -043 17:20	<b>Foldable base plate mechanism for parallel link robots</b> <i>Daigo Tokunaga, Satoshi Nishikawa, Kazuo Kiguchi</i>	
7A2 -044	N/A	

Room5, Mitake (42F) Chair: Alexey Lokit		Reliability
7A2 -051 16:40	<b>Geometric accuracy innovative design method for machine tool</b> <i>Sitong Wang, Gaiyun He, Dawei Zhang, Faze Chen, Rui Wang</i>	
7A2 -052 17:00	<b>RELIABILITY OF PRECAST CONCRETE BARRIER LOCK CONNECTIONS AT VEHICLE IMPACT</b> <i>Irina Demiyanyushko, Oleg Titov, Alexey Lokit</i>	
7A2 -053	N/A	
7A2 -054	N/A	

Room7, Sagami (42F) Chair: Charles Pinto		Computational Kinematics (9)
7A2 -071 16:40	<b>Ellipse Distance Geometry and the Design of 3R Robots</b> <i>Federico Thomas, Bertold Bongardt</i>	
7A2 -072 17:00	<b>Static Workspace Computation for Four-Cable Underactuated Cable-Driven Parallel Robots</b> <i>Edoardo Idà, Marco Carricato</i>	
7A2 -073 17:20	<b>Optimal Methodology for Synthesis and Analysis of Straight Line Mechanism</b> <i>Zorana Jeli</i>	
7A2 -074	N/A	

Room8, Starlight (43F) Chair: Med Amine Laribi		Biomechanical Engineering (5)
7A2 -081 16:40	<b>Experimental characterization of Almaty ankle joint exoskeleton</b> <i>Nursultan Zhetenbayev, marco Ceccarelli, Gani Balbayev</i>	
7A2 -082 17:00	<b>A Sit-to-Stand Assisting Device for Accomplishing Daily-Life Activities</b> <i>Pierluigi Rea, Maurizio Ruggiu, Erika Ottaviano</i>	
7A2 -083 17:20	<b>Design, Analysis, and Optimization of a Novel Stent Retriever for Acute Ischemic Stroke</b> <i>Shuo Wu, Bo Wang, Tianxiao Zhang, Shengnan Lyu</i>	
7A2 -084	N/A	

Room10, Comet (43F) Chair: Frank Schäf, Shyi-Jeng Tsai		Gearing and Transmissions (5)
7A2 -101 16:40	<b>Analysis of Transmission Errors and Load Sharing of Compound Stepped Planetary Gear Drives Considering Mesh Phasing</b> <i>Qi-You Zhuang, Shyi-Jeng Tsai</i>	
7A2 -102 17:00	<b>An antibacklash method for wolfrom reducers</b> <i>Pablo Riera, Josu Aguirrebeitia, Luis Maria Macareno, Aitor Isturiz</i>	
7A2 -103 17:20	<b>Experimental validation of models for the structural simulation of crossed roller wire-race bearing</b> <i>Iñigo Martín, Iker Heras, Josu Aguirrebeitia</i>	
7A2 -104	N/A	

## Nov. 8, Session 8A1, 13:20-15:00

Room1, Eminence Hall (5F) Chair: Oscar Altuzarra		Linkages and Mechanical Controls (6)
8A1 -011	N/A	
8A1 -012	<b>Spatial double-layer deployable mechanism based on Bennett linkage</b> 13:40 <i>Yajing Wang, Pengcheng LU, Dejun Mu, Bo Hu</i>	
8A1 -013	<b>Wheel Load Estimation and Anti-roll Bar Control Using Suspension Analysis with Neural Network</b> 14:00 <i>Tianyi Zeng, Tianyi Wang, Liyang Yu, Zeyu Liu, Haotian Chen, Xinbo Chen</i>	
8A1 -014	<b>Structural Synthesis of Stationary Cam-Modulated Seven-Bar Linkages for Press Driving Mechanisms</b> 14:20 <i>Wen-Tung Chang, Yi-Chen Li, Tzu-Liang Tsai, Chun-Ming Chang</i>	
8A1 -015	<b>A tensegrity-based elastic joint element</b> 14:40 <i>Lukas Merker, Valter Böhm, Lena Zentner</i>	

Room2, Takao (42F) Chair: Tobias Bruckmann		Robotics and Mechatronics (17)
8A1 -021	<b>Numerical Study of a Piezoelectric XY-Stage with Diamond-type Displacement Amplification Mechanism</b> 13:20 <i>Po-Yao Lin, Chen-Han Ke, Di-Yao Wang, Shang-Yu Lin, Yung-Tien Liu</i>	
8A1 -022	<b>Origami-based rotating bistable mechanism</b> 13:40 <i>Zhenfeng Wu, Jierong Li, Chaoyu Cui, Lixin Yang, Xianmin Zhang, Benliang Zhu</i>	
8A1 -023	<b>A Force-Sensing Compliant Gripper Based on Drivetrain Elasticity</b> 14:00 <i>Pin-Chun Yeh, Yi-Shian Tsai, Chao-Chieh Lan</i>	
8A1 -024	<b>Rounded Edges and Chamfers as a Protective Measure in Quasi-Static Contact Events</b> 14:20 <i>Elodie Huesing, Jocelyn Cañari, Burkhard CORVES</i>	
8A1 -025	<b>Experimental Determination of Calibrated Accuracy for Six-axis Force and Torque Sensors Using Compliant Mechanisms</b> 14:40 <i>Yu-Jen Wang, Shin-Yi Huang</i>	

Room3, Tama (42F) Chair: Chedli Bouzgarrou		Robotics and Mechatronics (18)
8A1 -031	<b>Conceptual Mechanical Design and Control of Novel Human Spine Inspired Multi-Articular Robotic Manipulators</b> 13:20 <i>Narek Zakaryan, Mikayel Harutyunyan, Yuri Sargsyan</i>	
8A1 -032	<b>Stabilizing a bipedal mechanism using control moment gyroscopes</b> 13:40 <i>Akio Toyoshima, Shunsuke Yoshimoto, Akio Yamamoto</i>	
8A1 -033	<b>Development of schemes of adaptive grippers of manipulators for uniform gripping of objects with a spherical shape</b> 14:00 <i>Yerbol Temirbekov, Zair Ualiyev, Bayandy Bostanov, Bairon Karassayev, Nurzhan Tolebayev, Daniyar Kerimkulov</i>	
8A1 -034	<b>Design optimization of a medical robot for shoulder rehabilitation</b> 14:20 <i>Paul Tucan, Marius Sofan, Bogdan Gherman, Octavian Giurgioiu, Adrian Pisla, Tiberiu Molnar, Calin Vaida, Carbone Giuseppe, Doina PISLA</i>	
8A1 -035	<b>Accuracy Criteria for Planar Flexures</b> 14:40 <i>Matteo Verotti, Simone Serafino, Pietro Fanghella</i>	

Room4, Musashi (42F) Chair: Daisuke Matsuura		Robotics and Mechatronics (19)
8A1 -041	<b>A Waypoint Designation System for Supervisory Control of Robots</b> 13:20 <i>Samuel Cheong, Gim Song Soh</i>	
8A1 -042	<b>Optimization of Whole-Body Motion for Humanoid Robot Walking Down Stairs with Small Joint Range of Motion</b> 13:40 <i>Xiang Meng, Zelin Huang, Qian Liang, Yue Dong, Zhifa Gao, Lianqiang Han, Junhang Lai, Sai Gu, Huanzhong Chen, Xuechao Chen, Qiang Huang</i>	
8A1 -043	<b>Movement simulation and analysis of a compliant parallel robot under cryogenic working conditions</b> 14:00 <i>Phillip Jahn, Annika Raatz, Patrick Gregor</i>	
8A1 -044	<b>Method of localization of racks with biomaterial for robot grasp based on segmented contour processing</b> 14:20 <i>Larisa Rybak, Vladislav Cherkasov, Carbone Giuseppe, Dmitry Malyshev, Dmitry Dyakonov</i>	
8A1 -045	<b>Vibration isolation in spacecraft using Gough-Stewart Platform</b> 14:40 <i>Yogesh Pratap Singh, Ashitava Ghosal</i>	

Room5, Mitake (42F) Chair: Enrico Galvagn		Transportation Machinery (1)
8A1 -051	N/A	
8A1 -052	<b>A Novel Integrated Driving and Steering Module and Its Multi-objective Optimization</b> 13:40 <i>Xinbo Chen, Jiawei Chen, Wei Wang</i>	
8A1 -053	<b>Event-triggered fault-tolerant control for vehicle rollover avoidance based on an active suspension with robustness against disturbances and communication delays</b> 14:00 <i>Fernando Viadero-Monasterio, Manuel Jimenez-Salas, Miguel Melendez-Useros, Beatriz Lopez Boada, María Jesus Lopez Boada</i>	
8A1 -054	<b>Decoupling Driveline and Steering Systems for 4x4 SUV Lateral Dynamics</b> 14:20 <i>Vladimir Vantsevich, Jesse Paldan, Lee Moradi</i>	
8A1 -055	N/A	

Room6, Tsukui (42F) Chair: Georg Nawratil		Computational Kinematics (10)
8A1 -061	<b>Irvine cable equations and neural networks</b> 13:20 <i>Jean-Pierre Merlet</i>	
8A1 -062	<b>Designing Planar Mechanisms with the Software Mechanism Developer (MechDev)</b> 13:40 <i>Vincent Paul Brünjes, Thomas Knobloch, Takahiro Aruga, Mathias Huesing, Burkhard Corves</i>	
8A1 -063	<b>Accuracy analysis of a redundantly actuated parallel mechanism considering passive joint clearances</b> 14:00 <i>Jianzhong Ding, Shiming Zhou, Haoran Yu, Xueao Liu, Chunjie Wang</i>	
8A1 -064	<b>Kinematic synthesis of fully decoupled planar parallel mechanisms by using multiple pantograph geometries</b> 14:20 <i>Abdullah Yasir, V. Van der Wijk, Just Herder</i>	
8A1 -065	<b>Singularity Analysis of 1-DOF Linkages with Helical Joints</b> 14:40 <i>Zijia Li, Andreas Mueller</i>	

Room7, Sagami (42F)		Chair: Jian S Dai	Computational Kinematics (11)
8A1 -071	13:20	<b>Synthesis and Analysis on the Most Efficient Force Input Locations for Coupler-driven Four-bar Mechanisms</b> <i>Chang Liu, Yin ping Chang, Longyuan Yao</i>	
8A1 -072	13:40	<b>Continuous rotational axes and workspace analysis of a novel 2UPU-2SPR Parallel Mechanism</b> <i>Yi Yue, Zhankui Zhang, Baochen Wei, Jiancheng Zhu, Xiuguang Li, Zhongjun Liao</i>	
8A1 -073	14:00	<b>Three-actuated-DOF Parallel Continuum Robot with High Twisting Performance: Cosserat Rod-based Kineto-static Modeling and Simulation</b> <i>Yuhang Lei, Ming Jiang, Yusuke Sugahara, Yukio Takeda</i>	
8A1 -074	14:20	<b>A Low-Cost, Moderately Fast System for Online Motion Tracking in Laparoscopic Surgery Training</b> <i>Pietro Fanghella, Luca Bruzzone, Matteo Verotti</i>	
8A1 -075	14:40	<b>Kinematic Analysis of a New 3T1R Parallel Manipulator</b> <i>Shi-Ta Lin, Meng-Yun Tsai, Chao-Chieh Lan</i>	

Room8, Starlight (43F)		Chair: Carlo De Benedictis	Biomechanical Engineering (6)
8A1 -081		N/A	
8A1 -082	13:40	<b>Design of medical robot for stereotactic surgery based on a 3-RPS parallel mechanism</b> <i>Karla Silva, Christopher René Torres-San Miguel, Fiacro Jimenez-Ponce, marco Ceccarelli</i>	
8A1 -083	14:00	<b>Asymmetries in Pelvis, Lumbar, and Thorax During Transfemoral Amputee Walking</b> <i>Heran Zhong, Zhihao Zhou, Qining Wang</i>	
8A1 -084	14:20	<b>System Stability Evaluation of Head-Shaking Test Using Balance Controller Parameters</b> <i>Emiko Uchiyama, Wataru Takano</i>	
8A1 -085	14:40	<b>Functional Drift Filtering of IMU for Long Term Wholebody Motion Capturing</b> <i>Kazuya Tomabechi, Yosuke Ikegami, Ko YAMAMOTO, Yoshihiko Nakamura</i>	

Room9, Moonlight (43F)		Chair: Horst Ecker	Dynamics of Rotating Machines (2)
8A1 -091	13:20	<b>Self-excited torsional vibrations of a motor-driven reciprocating-compressor</b> <i>Timo Holopainen</i>	
8A1 -092	13:40	<b>Synthesis of a Cam Based Dwell Mechanism Using the Eigenmotion</b> <i>Thomas Knobloch, Burkhard CORVES, Mathias Hüsing, Eileen Neukirchen</i>	
8A1 -093	14:00	<b>Deep Learning for Centrifugal Pump Condition Monitoring Using Data From Variable Frequency Drive</b> <i>Topias Turunen, Jesse Miettinen, Aleksanteri Hämäläinen, Aku Karhinen, Raine Viitala</i>	
8A1 -094	14:20	<b>On the nonlinear dynamics of a rigid rotor supported by shimmed conical gas foil bearings</b> <i>Marian Sarrazin, Robert Liebich</i>	
8A1 -095	14:40	<b>A Data-Driven and Physical Feature Analysis Method for Diagnosing Bearing Faults in Rotating Shaft</b> <i>Kuo-Yu Huang, Kai-Yang Peng, Han-Hao Tsai, Jen-Yuan Chang</i>	

Room10, Comet (43F)		Chair: Frank Schäf, Yu-Ren Wu	Gearing and Transmissions (6)
8A1 -101		N/A	
8A1 -102		N/A	
8A1 -103	14:00	<b>An Analytical Model for Power Skiving Process of Helical Face Gears</b> <i>Khoe-Qui Le, Yu-Ren Wu</i>	
8A1 -104	14:20	<b>Design of Harmonic Drive with Double-circular-arc Tooth Profile</b> <i>Ran Xie, Guocheng Zhou, Heyu Liu, Qu He, Yuhu Yang, Zhaoguang Shen</i>	
8A1 -105	14:40	<b>Planetary Gear Trains with High Speed Reduction Ratio</b> <i>Ching_Lung Chen, Win-Bin Shieh, Ching-Kong Chen</i>	

Room12, Orion (43F)		Chair: Enrico Ciulli	Tribology (2)
8A1 -121		N/A	
8A1 -122	13:40	<b>Profile optimization in roller bearings for pressure uniformity</b> <i>L. Macareno, J. Aguirrebeitia, I. Heras, M. Eizmendi</i>	
8A1 -123	14:00	<b>The tribological properties of DLC coating with B/Cr codopants and clarification of the mechanism at 300oC</b> <i>Ruixi Zhang, Woo-Young Lee, Noritsugu Umehara, Takayuki Tokoroyama, Motoyuki Murashima, Yuji Takimoto</i>	
8A1 -124	14:20	<b>In silico mixed lubrication model to evaluate the radial clearance influence on the tribology of total hip replacement</b> <i>Alessandro Ruggiero, Alessandro Sicilia</i>	
8A1 -125	14:40	<b>Development of low-friction DLC surface with liquid film derived from the air using dielectric barrier discharge</b> <i>Wenjun Wu, Noritsugu Umehara, Takayuki Tokoroyama, Motoyuki Murashima, Ruixi Zhang</i>	

## Nov. 8, Session 8A2, 15:20-17:00

Room1, Eminence Hall (5F) Chair: Giuseppe Quaglia		Linkages and Mechanical Controls (7)
8A2 -011 15:20	<b>Analysis of a Novel Torus Tensegrity Structure</b> <i>Heping Liu, Jinxin Lu, Ani Luo</i>	
8A2 -012 15:40	<b>Modified Tooth Design of a Trochoidal Sprocket for a Roller Chain Drive to Improve Positioning Accuracy</b> <i>Kazuyoshi Ishida, Koji Makino, Xiao Sun, Shun Tomita, Hiroki Yokota, Hidetsugu Terada</i>	
8A2 -013 16:00	<b>A Novel Actuation Mechanism for High-bandwidth Bidirectional Rotation of Cable-driven Revolute Joints</b> <i>Zhihao Zhou, Zihang Zhao, Lecheng Ruan, Qining Wang</i>	
8A2 -014 16:20	<b>Coupler curves of a tendon driven hybrid rigid-flexible four-bar. Applications to optimal path design</b> <i>Alfonso Hernandez, Aitor Muñozerro, Monica Urizar Arana, Oscar Altuzarra</i>	
8A2 -015 16:40	<b>Kinematics of a Tripod Parallel Continuum Robot</b> <i>Oscar Altuzarra, Victor Petuya, Mario Acevedo, Miguel Vizcaino, Sebastian Rodriguez</i>	

Room2, Takao (42F) Chair: Daniela Tarnita		Robotics and Mechatronics (20)
8A2 -021 15:20	<b>Development of a Finger Rehabilitation Device</b> <i>Rogério Sales Gonçalves, Paulo Eduardo Ferreira da Silva, Ana Luiza Silva, Carbone Giuseppe, marco Ceccarelli</i>	
8A2 -022 15:40	<b>New concept design of a modular robotic system for upper limb rehabilitation</b> <i>Calin Vaida, Marius Sofan, Paul Tucan, Octavian Giurgioiu, Adrian Pisla, Tibor Molnar, Bogdan Gherman, Carbone Giuseppe, Doina PISLA</i>	
8A2 -023 16:00	<b>3D Printed Low Noise Nozzle: Design and Experimental Tests</b> <i>Daniela Maffiodo, Riccardo Volpiano</i>	
8A2 -024 16:20	<b>VR Pedestrian Flow Simulator by Real-time 3D Motion Reconstruction for Multiple Characters</b> <i>Akihiro Sakurai, Yosuke Ikegami, Ko YAMAMOTO</i>	
8A2 -025 16:40	<b>The Effects of Passive Joints on the Stiffness of a Parallel Kinematic Manipulator</b> <i>Pin-Yi Ho, Chia-Hsin Hsieh, Wei-Hsuan Lin, Chih-Wei Li, Cheng-Kuo Sung, Yu-Jen Chiu</i>	

Room3, Tama (42F) Chair: Can Dede		Robotics and Mechatronics (21)
8A2 -031 15:20	<b>Mechanical design of a novel reconfigurable wheel-legged robot with multiple locomotion modes</b> <i>Li Zhengyi, Shuwen Kou, Junchen Yue, Yaobin Tian, Kun Xu, Xilun Ding</i>	
8A2 -032 15:40	<b>Increasing Estimation Precision of Human Arm Motion with IMU System and Improved Kinematic Model</b> <i>Yan-Yi Lee, Chen Zhi-Yong, Jen-Yuan Chang</i>	
8A2 -033 16:00	<b>On the design optimization of a parallel robotic system for liver cancer treatment</b> <i>Bogdan Gherman, Andra Ciocan, Andrei Caprariu, Paul Tucan, Corina Radu, Calin Vaida, Adrian Pisla, Alin Horsia, Nadim Al Hajjar, Doina PISLA</i>	
8A2 -034 16:20	<b>Motion Planning Framework for Low Obstacle Traversal and Avoidance</b> <i>Brandon Lawrence, Chen Shen, Hoan Nghia Ho, Gim Song Soh</i>	
8A2 -035 16:40	<b>Dynamic Task Capability based Task Allocation for Collaborative Manipulation</b> <i>Keshab Patra, Arpita Sinha, Anirban Guha</i>	

Room4, Musashi (42F) Chair: Georg Rauter		Robotics and Mechatronics (22)
8A2 -041 15:20	<b>Calibration of a dynamometric plate for a balance rehabilitation machine in static conditions</b> <i>Francisco J. Campa, Juan Sebastián García, Mikel Diez, Javier Corral, Erik Macho, Saioa Herrero Villalibre, Charles Pinto</i>	
8A2 -042 15:40	<b>Identification of the gear transmission's efficiency by neural network</b> <i>Kenya Mori, Gentiane Venture</i>	
8A2 -043 16:00	<b>Design and prototyping of novel chimney cleaning robot</b> <i>Carbone Giuseppe</i>	
8A2 -044 16:20	<b>Design of a wheelchair-mounted arm for mealtimes assistance of upper-limb-paralyzed patients</b> <i>Carbone Giuseppe</i>	
8A2 -045 16:40	<b>Motion Design for Robotic Contact: Insertion Tasks</b> <i>Siamak Arbatani, Jozsef Kovacs, Marek Teichmann</i>	

Room5, Mitake (42F) Chair: Enrico Galvagno		Transportation Machinery (2)
8A2 -051 15:20	<b>An Improved Model for Road-Tyre Interaction</b> <i>Kamran Hashmi, Anirban Guha</i>	
8A2 -052 15:40	<b>A Novel Underactuated Cam Mechanism</b> <i>Zhoudong Yan, Xinbo Chen, Wei WANG</i>	
8A2 -053 16:00	<b>EMD-based intelligent crack detection in freight railway axles.</b> <i>Alejandro Bustos Caballero, Higinio Rubio, CRISTINA CASTEJON SISAMON, Juan Carlos Garcia-Prada</i>	
8A2 -054	N/A	
8A2 -055	N/A	

Room6, Tsukui (42F) Chair: Pietro Fanghella		Computational Kinematics (12)
8A2 -061 15:20	<b>A local overfitting alleviation method for data-driven calibration applied in a 5-DOF hybrid robot</b> <i>Conglin Wu, Zhibiao Yan, Tian Huang, Haitao Liu, Haoyuan Wu, Xiaobiao Ge</i>	
8A2 -062 15:40	<b>Design and Selection method of compliant 3RRR Planar Parallel mechanism</b> <i>Nianfeng Wang</i>	
8A2 -063 16:00	<b>3-UCU: a new parallel robot with 6 degrees of freedom</b> <i>Chedli Bouzgarrou, Khaled Arrouk</i>	
8A2 -064 16:20	<b>Mobility Analysis of a Novel six-DOF Parallel Robot with Additional Rotation and Plate Tilting Mechanisms</b> <i>Takashi Harada, Hayato Yase</i>	
8A2 -065 16:40	<b>Optimal design of bridge amplifiers for large-range linear characteristics</b> <i>Lavanya SB, G.R. Jayanth, A. K. Mohanty</i>	

Room7, Sagami (42F) Chair: Tao Sun		Computational Kinematics (13)
8A2 -071 15:20	<b>An Approach for Predicting and Compensating the End Deformation of a Heavy Load Robot for Friction Stir Welding</b> <i>Yujie Bai, Haitao Liu, Shaofei Meng, Yue Ma, Wei Yue, Guangxi Li, Juliang Xiao, Guofeng Wang, Yabin Ding</i>	
8A2 -072 15:40	<b>Nonlinear Strain Energy Formulation of Spatially Deflected Strip Flexures</b> <i>Ruiyu Bai, Nan Yang, Bo Li, Guimin Chen</i>	
8A2 -073 16:00	<b>Clearance-induced position uncertainty estimation and experimental verification of a planar parallel manipulator</b> <i>zhenhui zhan, Xianmin Zhang, Bo Zhao, Qiqiang Wu</i>	
8A2 -074 16:20	<b>A novel reconfigurable compliant mechanism with adjustable motion direction and multiple motion modes</b> <i>Junjie Du, Xianmin Zhang, Benliang Zhu, Chaoyu Cui, Hao Xu, Yanjiang Huang</i>	
8A2 -075 16:40	<b>A New Index for the Evaluation of Mechanism Workspace: Application to Six-DoF Architectures</b> <i>Christopher Reinaldo, T�rence Essomba, Latifah Nurahmi</i>	

Room8, Starlight (43F) Chair: Carlo De Benedictis		Biomechanical Engineering (7)
8A2 -081 15:20	<b>Innovative Mechanism Design of Oral Cavity Muscles Exercising Device</b> <i>Pei-ti Mao, TZU-Lei Huang, Ci, Jhen Ni, Guan-Chen Chen, Yu-Hsun Chen</i>	
8A2 -082 15:40	<b>Power Transmission Mechanism from Upper Limb to Lower Limb by Pneumatic Artificial Muscles for Development of Self-Assist Suit</b> <i>Ayumu Nara, Kenji Hashimoto</i>	
8A2 -083 16:00	<b>Abrupt movements assessment of human arms based on recurrent neural networks for interaction with machines</b> <i>Michele Polito, Elisa Digo, Stefano Pastorelli, Laura Gastaldi</i>	
8A2 -084 16:20	<b>Low-cost Design of a Device for Monitoring the Physiological Status of a Vehicle Driver</b> <i>Maria Garrosa, marco Ceccarelli, Vicente Diaz</i>	
8A2 -085 16:40	N/A	

Room9, Moonlight (43F) Chair: Tomasz Szolc, Pavel Polach		Dynamics of Rotating Machines (3)
8A2 -091 15:20	<b>Physical Limitations for High-speed Electric Machines Rotor Dimensions</b> <i>Emil Kurvinen, Jussi Sopanen, Tuhin Choudhury</i>	
8A2 -092 15:40	<b>Rotordynamic Investigation of Roll Bouncing Phenomenon in Two-Drum Winder</b> <i>Samuli Ryt�maa, Sampo Laine, Raine Viitala</i>	
8A2 -093 16:00	<b>Dynamics of Large Turbine Rotors supported by Tilting Pad Journal Bearings</b> <i>Michal Hajzman, Pavel Polach, Jan Rendl, St�p�n Dyk, Radek Bulin, Luboř Smolík</i>	
8A2 -094 16:20	<b>Frequency Domain based Method for Solving Response due to Outer Race Defect in Deep Groove Ball Bearings</b> <i>Tuhin Choudhury, Khurram Shehzad, Emil Kurvinen, Jussi Sopanen, Charles Nutakor</i>	
8A2 -095 16:40	<b>Computational Model for the Calculation of Natural Vibration Characteristics of a Turbine Bladed Disk</b> <i>Pavel Polach</i>	

Room10, Comet (43F) Chair: Kuantbay Bissembayev, Juan Carlos Jauregui		Vibrations
8A2 -101 15:20	<b>Oscillations of a Body on Rolling Bearings with Straightened Surfaces Caused by a Random Movement of the Base</b> <i>Kuantbay Bissembayev, Amandyk Tuleshov, Askar Seidakhmet, Madi Kaliyev, Kundyz Sultanova</i>	
8A2 -102 15:40	<b>Vibration of Internal gear in Planetary Gear Trains under Moving Load</b> <i>Jianming Yang, Mohammadjavad Abedinilaksar, Ping Yang</i>	
8A2 -103 16:00	<b>Modelling Cable Vibration Following Load Removal</b> <i>Mouna Ammar, Laszlo E. Kollar</i>	
8A2 -104 16:20	<b>Predicting operating conditions in wind turbines under gusty winds</b> <i>Juan Carlos Jauregui, Ignacio Torres Contreras</i>	
8A2 -105 16:40	N/A	

Room12, Orion (43F) Chair: Dae-Eun Kim		Tribology (3)
8A2 -121 15:20	<b>Pivot Rolling Motion Effect in Rocker Back Tilting Pad Journal Bearings: First Comparison between Experiment and Simulation</b> <i>Alberto Betti, Paola Forte, Daniele Panara, Enrico Ciulli</i>	
8A2 -122 15:40	<b>Tribo-corrosion properties of hard carbonaceous coatings</b> <i>Li Lulu, Noritsugu Umehara, Takayuki Tokoroyama, Ruixi Zhang</i>	
8A2 -123 16:00	<b>Contact behavior of a sliding spherical indenter at supersonic speed</b> <i>Se Jun Shim, Hyeonggeun Jo, Ilkwang Jang, Yong Hoon Jang</i>	
8A2 -124 16:20	<b>Highly Flexible Stretchable Strain Sensor with Sensitivity and Durability for Human-Motion Detection</b> <i>Sung-Jun Lee, Chang-Lae Kim</i>	
8A2 -125 16:40	<b>Effect of Fracture Toughness on Wear of DLC Coatings</b> <i>Yusei Yamada, Motoyuki Murashima, Noritsugu Umehara, Takayuki Tokoroyama, Woo-Young Lee</i>	

## Nov. 9, Session 9M1, 9:00-10:40

Room1, Eminence Hall (5F) Chair: Marco Ceccarelli		Linkages and Mechanical Controls (8)
9M1-011	N/A	
9M1-012	<b>Conceptual Design and Analysis of a Novel Magnetic Braking Descent Device</b> 9:20 <i>FENG-MING OU, YI-CHANG WU, CHENG-FENG WU</i>	
9M1-013	<b>Compact Gravity-Balanced Design of Serial Robots Under Payload Variation</b> 9:40 <i>Vu Linh Nguyen</i>	
9M1-014	<b>An investigation on assembly accuracy adjustment of a parallel-kinematic machine at multiple positions</b> 10:00 <i>Jhy-Cherng TSAI, Ching-Yu Chang, Yu-Jen Wang, Yu-Jen Chiu</i>	
9M1-015	<b>Genetic Algorithm Application in Walking Mechanism Designed with Planar Link Mechanism</b> 10:20 <i>Yoshihiko Matsumoto, Yasuhiro Inoue</i>	

Room2, Takao (42F) Chair: Danel Condurache		Robotics and Mechatronics (23)
9M1-021	N/A	
9M1-022	<b>Toward Safe and Efficient Human-Robot Teams: Mixed Reality-based Robot Motion and Safety Index Visualization</b> 9:20 <i>Gustavo Alfonso Garcia Ricardez, Carl Törnberg, Lotfi El Hafi, Jorge Solis, Tadahiro Taniguchi</i>	
9M1-023	<b>Truss Arm : the World's Longest Telescopic Arm with Highest Payload and with No Deflection for the Decommissioning of Fukushima Daiichi Nuclear Power Plant</b> 9:40 <i>Tomohiro OKA, Naoto Kimura, Shigeo Hirose</i>	
9M1-024	<b>An Integral-Elimination based Inertial and Friction Parameters Identification Method</b> 10:00 <i>Xianlei Shan, Wei Yue, Qingpo Xu, Junyi Shi, Wei Han, Junhui Yi, Haitao Liu, Yijin Wang, Yijin Wang</i>	
9M1-025	<b>An Alternative Solution for Balancing of the 3-PRRR Fully-Isotropic Translational Parallel Robot</b> 10:20 <i>Mario Acevedo</i>	

Room3, Tama (42F) Chair: Cristina Castejon		Robotics and Mechatronics (24)
9M1-031	N/A	
9M1-032	<b>Contact and slide sensing of the MERO walking robot on uneven terrain</b> 9:20 <i>ION ION, Dinu Cornel, Stefanescu Dan, Curaj Adrian, Gavan Mircea</i>	
9M1-033	<b>Variable Stiffness Joint Implementation in a Mechanism for the Arm Rehabilitation</b> 9:40 <i>María Guadalupe Contreras Calderon, Amine Laribi, Juan Sandoval, Eduardo Castillo, María del Rosario Hernández-Hernández, Marc Arsicault, ABDELBADIA CHAKER</i>	
9M1-034	<b>Switched Force/Impedance control for humanoid robot walking on irregular surfaces</b> 10:00 <i>Irvin Gabriel Castillo Hernández, Carlos Alberto Cruz-Villar, Jaime Alvarez-Gallegos</i>	
9M1-035	<b>Design of Underwater Robot system for collecting Floating debris</b> 10:20 <i>Sangheon Roh, Donghwi Shin, Jeonghyeon Lee, Taegyun Kim, Sungkeun Lee</i>	

Room4, Musashi (42F) Chair: Pierre Larochelle		Robotics and Mechatronics (25)
9M1-041	N/A	
9M1-042	<b>Robust design of ATHENA ISM Parallel Manipulator</b> 9:20 <i>Jorge Múgica, Joseba Zubia, M<sup>a</sup> Asunción Illarramendi, Pablo Campo, Gonzalo Taubmann</i>	
9M1-043	<b>Cycle time reduction through redundancy optimization in industrial robotic tasks</b> 9:40 <i>Matteo Manzardo, Giovanni Carabin, Luca Gualtieri, Renato Vidoni</i>	
9M1-044	<b>A reconfigurable actuation unit for modular cable-driven robots</b> 10:00 <i>Matteo Russo, Daniele Cafolla, Betsy D.M. Chaparro-Rico</i>	
9M1-045	<b>Inverse Experimental Estimation of Bending of a Cylinder-Piston Actuator of a Parallel Platform by Relative Optical Marker Tracking</b> 10:20 <i>Christian Brans, Andrés Kecskeméthy</i>	

Room6, Tsukui (42F) Chair: Oscar Altuzarra		Computational Kinematics (14)
9M1-061	N/A	
9M1-062	<b>Singularity Conditions of Concentric Tube Robots</b> 9:20 <i>Federico Zaccaria, Edoardo Idà, Sebastien Briot</i>	
9M1-063	<b>A Novel Class of (3+2)-DOF Reconfigurable Generalized Parallel Mechanisms with Kinematic Redundancy</b> 9:40 <i>Chunxu Tian, Luquan Li, Zhihao Xia, Dan Zhang</i>	
9M1-064	<b>Kinematic Modeling and Analysis of a New Hybrid Seven-Bar Linkage Mechanism</b> 10:00 <i>Amandyk Tuleshov, Recep Halicioglu, Moldir Kuvatova</i>	
9M1-065	<b>A quantitative comparison of uniformity of distribution achieved in different methods of discrete sampling of SO(3)</b> 10:20 <i>Bibekanda Patra, Sandipan Bandyopadhyay</i>	

## Nov. 9, Session 9M2, 11:00-12:40

Room1, Eminence Hall (5F) Chair: Miroslav Vaclavik		Linkages and Mechanical Controls (9)
9M2-011 11:00	<b>Research of an Entry Vehicle with Semi-rigid Trapezoid Deployable Structures</b> <i>Zijie Chen, Hongwei Guo, Rongqiang Liu, Chuang Shi, Zongquan Deng</i>	
9M2-012 11:20	<b>Structural synthesis of robot manipulators with general constraint two</b> <i>Rasim Alizade, Javad Samadzade</i>	
9M2-013 11:40	<b>Design and analysis of 8R-Folding metamorphic mechanism and metamorphic robot</b> <i>Mi Li, Wujie Shi, Junpeng Chen, Zheming Zhuang, Dai Jian Sheng</i>	
9M2-014	N/A	
9M2-015	N/A	

Room2, Takao (42F) Chair: Georg Rauter		Robotics and Mechatronics (26)
9M2-021 11:00	<b>Design of Movable Casing for Friction Reduction of External Gear Pump for Hydraulic Actuators</b> <i>Mitsuo Komagata, Ko YAMAMOTO, Yoshihiko Nakamura</i>	
9M2-022 11:20	<b>System Design, Localization, and Forced-based Trajectory Evaluation of the Magnetic Adhesion Robot</b> <i>Tongjia Li, Hao Xu, Weizhong Guo</i>	
9M2-023 11:40	<b>Spring perfectly statically balanced 1-DOF mechanisms using slider-crank</b> <i>Cheng-Hsuan Hsu, Yu-Hsuan Lin, Chi-Shiun Jhuang, Dar-Zen Chen</i>	
9M2-024 12:00	<b>A Novel Approach to Occupancy Grid Map Merging in Environments with Highly Repetitive Features</b> <i>Chung-Jui Lai, Kuei-Yuan Chan</i>	
9M2-025	N/A	

Room3, Tama (42F) Chair: Alessandro Gasparetto		Robotics and Mechatronics (27)
9M2-031 11:00	<b>Design of a manipulator for agriculture</b> <i>Michal Olinski, Pawel Dudziński, marco Ceccarelli</i>	
9M2-032 11:20	<b>The Design of a Multi-legged Modular Walking Robot</b> <i>Jiayi Li, J. M. McCarthy, Chenhao Liu</i>	
9M2-033 11:40	<b>Configuration evolution of 6-DoF parallel robots based on Markov decision process</b> <i>Xinming Huo, Chongyang Jiang, Bo Wang, Yimin Song, Tao Sun</i>	
9M2-034 12:00	<b>Optimal inverse kinematics solution for redundant manipulators combined with trajectory scaling</b> <i>Łukasz Woliński, Marek Wojtyra</i>	
9M2-035	N/A	

Room4, Musashi (42F) Chair: Giuseppe Quaglia		Robotics and Mechatronics (28)
9M2-041 11:00	<b>Passively adaptive external force compensation system for serial manipulators</b> <i>Albert Demian, Alexandr Klimchik</i>	
9M2-042 11:20	<b>Calculation of the main parameters of the gripper of a robotic manipulator when reloading spherical and cylindrical objects</b> <i>Assylbek Jomartov, Aidarkhan Kaimov, Yerbol Temirbekov, Talgat Kaiym, Amandyk Tuleshov, Yevgeniy Chsherbinin, Maksat Kalimoldayev, Suleimen Kaimov</i>	
9M2-043 11:40	<b>Experimental research of a parallel manipulator in a singular configuration</b> <i>Jacek Bałchanowski, Sławomir Wudarczyk</i>	
9M2-044 12:00	<b>A Distributed Topology Unfolding Mechanism for Maintaining Communication Link Between Mobile Nodes</b> <i>Jabez Leong Kit, Gim Song Soh</i>	
9M2-045	N/A	

Room6, Tsukui (42F) Chair: Martin Pfurner		Computational Kinematics (15)
9M2-061 11:00	<b>Trajectory Synthesis and Sensitivity Analysis of Six-Bar Mechanism for Gait Implementation</b> <i>Yating Zhang, Ping Zhao, Longxiao Gong, Xueting Deng</i>	
9M2-062 11:20	<b>Design and modeling of a compact three-stage displacement amplification mechanism based on RBC-inspired flexure hinges</b> <i>Lei Yuan, Mingxiang Ling, Jianhao Lai, Tingjun Zeng, Benliang Zhu, Hai Li, Lixin Yang, Xianmin Zhang</i>	
9M2-063 11:40	<b>Cyclic Quadrilateral Positions of Planar 4R Four-Bar Mechanism</b> <i>RAVI TRIPATHI, Rama Krishna K</i>	
9M2-064 12:00	<b>A Novel Spatial 3-DoF Constant-Force Generator for the Static Balancing of Parallel Robots</b> <i>Giovanni Mottola, Alberto Martini</i>	
9M2-065	N/A	