



## CONFERENCE PROGRAM

### OVERALL PROGRAM

#### SUNDAY JUNE 26<sup>TH</sup>

19:00	21:00	Welcome Reception and Registration
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#### MONDAY JUNE 27<sup>TH</sup>

08:00	09:00	Registration
09:00	09:30	Opening Speech
09:30	10:30	<b>Session 1</b>
10:30	11:00	Coffee Break
11:00	13:00	<b>Session 2</b>
13:00	15:00	Lunch
15:10	16:30	<b>Session 3</b>
16:30	17:00	Coffee Break
17:00	18:20	<b>Session 4</b>
18:30	20:00	Social Time
20:00	23:00	Old Town Guided Tour

#### TUESDAY JUNE 28<sup>TH</sup>

08:00	08:50	Registration
08:50	10:30	<b>Session 5</b>
10:30	11:00	Coffee Break
11:00	13:00	<b>Session 6</b>
13:00	14:00	Lunch
14:00	20:00	Urdaibai-Gernika Tour

#### WEDNESDAY JUNE 29<sup>TH</sup>

09:10	10:50	<b>Session 7</b>
10:50	11:20	Coffee Break
11:20	13:00	<b>Session 8</b>
13:00	15:00	Lunch
15:10	16:30	<b>Session 9</b>
16:30	17:00	Coffee Break
17:00	18:30	CK TK Meeting
18:30	20:30	Social Time
20:30	00:00	Gala Dinner

#### THURSDAY JUNE 30<sup>TH</sup>

09:10	10:50	<b>Session 10</b>
10:50	11:20	Coffee Break
11:20	13:00	<b>Session 11</b>
13:00	15:00	Farewell Reception
		Boat Trip



## CONFERENCE PROGRAM

SUNDAY, JUNE 26<sup>TH</sup> 2022

19:00	21:00	<i>Welcome Reception and Registration</i>
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MONDAY, JUNE 27<sup>TH</sup> 2022

08:00	09:00	<i>Registration</i>
09:00	09:30	<i>Opening Speech</i>

SESSION 1			
09:30	09:50	Möbius Linkages	M.L. Husty
09:50	10:10	On Origami-Like Quasi-Mechanisms with an Antiprismatic Skeleton	G. Nawratil
10:10	10:30	Line-Point Constraints and Robot Surgery	J.M. Selig
10:30	11:00	<i>Coffee Break</i>	

SESSION 2			
11:00	11:20	On the Use of Ternary Products to Characterize the Dexterity of Spatial Kinematic Chains	B. Bongardt, A. Müller
11:20	11:40	Extended Rotation Matrix for Kinematics of Pointing Mechanism	S. Bai
11:40	12:00	A Linearization Method based on Lie Algebra for Pose Estimation in a Time Horizon	N. Torres Alberto, L. Joseph, V. Padois, D. Daney
12:00	12:20	Hyper-Multidual Algebra and Higher-Order Kinematics	D. Condurache
12:20	12:40	Geometry based Analysis of 3R Serial Robots	D. Salunkhe, J. Capco, D. Chablat, P. Wenger
12:40	13:00	Synthesis of Gripper Mechanisms Derived from Baranov Chains	F.V. Morlin, V.N. Artmann, A.P. Carboni, D. Martins
13:00	15:00	<i>Lunch</i>	

SESSION 3			
15:10	15:30	6R Linkages with Hidden Singularities	Z. Li, A. Müller
15:30	15:50	Best Operation Regions in a Planar Cable-Driven System	L. Mejia, F. Frantz, D. Ponce, D. Martins
15:50	16:10	Stiffness and Transparency of a Collaborative Cable-Driven Parallel Robot	M. Métillon, C. Charron, K. Subrin, S. Caro
16:10	16:30	An Approach for Predicting the Calibration Accuracy in Planar Cable-Driven Parallel Robots	B. Wang, P. Cardou, S. Caro
16:30	17:00	<i>Coffee Break</i>	

SESSION 4			
17:00	17:20	A Panorama of Methods for Dealing with Sagging Cables in Cable-Driven Parallel Robots	J-P. Merlet, R. Tissot
17:20	17:40	Sensitivity of the Direct Kinematics of Underactuated Cable-Driven Parallel Robots to Redundant Sensor-Measurement Errors	S. Gabaldo, E. Idà, M. Carricato
17:40	18:00	Stacked Tensegrity Mechanism for Medical Application	D. Khanzode, R. Jha, E. Duchalais, D. Chablat
18:00	18:20	Kinematic and Static Analysis of a Cable-Driven 2-X Tensegrity Manipulator for Two Actuation Strategies	V. Muralidharan, P. Wenger, C. Chevallereau
18:30	20:00	<i>Social Time</i>	
20:00	23:00	<i>Old Town Guided Tour</i>	



## CONFERENCE PROGRAM

TUESDAY, JUNE 28<sup>TH</sup> 2022

08:00	08:50	<i>Registration</i>	
<b>SESSION 5</b>			
08:50	09:10	Complete Inverse Geometric Model Computation of the Quattro Parallel Kinematic Robot	H. Chanal, R. Rizk, N. Bouton, B. Blaysat
09:10	09:30	A New Approach to Forward Kinematics for a SILS Robotic Orientation Platform based on Perturbation Theory	I. Birlescu, C. Vaida, A. Pusca, D. Pislă
09:30	09:50	Forward Kinematics of a Novel 6-DoF Spatial Hybrid Manipulator	S. Ramesh, P. Golla, P. Kumar Prasad, S. Bandyopadhyay
09:50	10:10	Structural and Dimensional Synthesis of Overconstraint Symmetric 3T2R Parallel Robots using Tait-Bryan-Angle Kinematic Constraints	M. Schappler
10:10	10:30	Inverse Kinematics for Functional Redundancy of Symmetric 3T1R Parallel Manipulators using Tait-Bryan-Angle Kinematic Constraints	M. Schappler
10:30	11:00	<i>Coffee Break</i>	
<b>SESSION 6</b>			
11:00	11:20	Analysis of a Compliant Parallel Manipulator for Torso Balance Rehabilitation	F.J. Campa, D. Diaz-Caneja, M. Diez, O. Altuzarra
11:20	11:40	Design and Analysis of a Compliant Parallel Robot with Cardan Joints for a Cryogenic Working Environment	P. Jahn, J. Hentschel, A. Raatz
11:40	12:00	Design and Inverse Kinematics of a Novel Tendon-Driven Continuum Manipulator Capable of Twisting Motion	Y. Lei, Y. Sugahara, Y. Takeda
12:00	12:20	Geometric Insights into Kinematically-Singular Configurations of Planar Continuum Robots	N. Shihora, N. Simaan
12:20	12:40	A Gazebo Simulator for Continuum Parallel Robots	A. Gotelli, F. Zaccaria, O. Kermorgant, S. Briot
12:40	13:00	Exploring Electric Field Perturbations as the Actuator for Nanorobots and Nanomachines	C. Mundrane, M. Chorsi, O. Vinogradova, H. Ilies, K. Kazerounian
13:00	14:00	<i>Lunch</i>	
20:00	23:00	<i>Urdaibai-Gernika Tour</i>	



## CONFERENCE PROGRAM

WEDNESDAY, JUNE 29<sup>TH</sup> 2022

SESSION 7			
09:10	09:30	General Procedure for Path Generation Synthesis based on Kinematic Constraints	A. Muñozerro, A. Hernández, M. Urizar, O. Altuzarra
09:30	09:50	Finding Straight Line Generators through the Approximate Synthesis of Symmetric Four-Bar Coupler Curves	A. Baskar, M. Plecnik, J. Hauenstein
09:50	10:10	A Method for the Complete Set of Solutions of the Finite-Position Synthesis Problem	A. Perez Gracia
10:10	10:30	Classification of Mobilities - New Insights on an Old Topic	T. Hoeltgebaum, L. Meneghini, V.N. Artmann, D. Martins
10:30	10:50	First and Second Order Centroides of Slider-Crank Mechanisms by using Instantaneous Invariants	C. Lanni, G. Figliolini, L. Tomassi
10:50	11:20	<i>Coffee Break</i>	
SESSION 8			
11:20	11:40	Spherical 4R Linkage Algebraic $v_i-v_j$ Input-Output Equations	M. John, D. Hayes, Mirja Rotzoll, Z. Copeland
11:40	12:00	Kinematics of a Gear-Based Spherical Mechanism	F. Thomas
12:00	12:20	Modeling of a Remote Center of Motion Spherical Parallel Tensegrity Mechanism for Percutaneous Interventions	H. El Jjouaoui, G. Cruz-Martinez, J.-C. Avila Vilchis, A. Vilchis González, S. Abdelaziz, P. Pognet
12:20	12:40	WriFlex: Design and Kinematic Analysis of a Self-Aligning Parallel Wrist	H. Simas, R. Simoni, R. Di Gregorio
12:40	13:00	Kinematic Analysis of a Novel Humanoid Wrist Parallel Mechanism	C. Stoeffler, A. del Rio Fernandez, H. Peters, M. Schilling, S. Kumar
13:00	15:00	<i>Lunch</i>	
SESSION 9			
15:10	15:30	Smooth Wrapping of Stretchable Thick Strands Over a Surface - The 2D Case	K. Müller, A. Kecskemethy
15:30	15:50	Exploiting Reciprocity between Constraints and Instantaneous Motion to Reconstruct Individual Knee Kinematics	M. Conconi, N. Sancisi, V. Parenti-Castelli
15:50	16:10	Generation of Parametric Gait Patterns	J. Ziegler, H. Gattringer, A. Müller
16:10	16:30	Parametrization of Compliant, Object-Level Controllers from Human Demonstrations	E. Galbally Herrero, A. Piedra, C. Brosque, O. Khatib
16:30	17:00	<i>Coffee Break</i>	
17:00	18:30	<i>CK TK Meeting</i>	
18:30	20:30	<i>Social Time</i>	
20:30	00:00	<i>Gala Dinner</i>	



## CONFERENCE PROGRAM

THURSDAY, JUNE 30<sup>TH</sup> 2022

SESSION 10			
09:10	09:30	Geometric Model for Serial-Chain Robot Inverse Kinematics in Case of Two Translational DoF, Spatial Rotation and Functional Redundancy	M. Schappler, T. Blum, T-D. Job
09:30	09:50	The Distance Geometry of the Generalized Lobster's Arm	F. Thomas, J.M. Porta
09:50	10:10	Degenerate Cases in the Inverse Kinematics Problem of a General 6R Serial Robot	A. Das, A. Nag, S. Kumar Saha
10:10	10:30	The Spatial Pantograph and its Mass Balance	V. van der Wijk
10:30	10:50	A New Family of Overconstrained P5R-Mechanisms	Z. Li
10:50	11:20	<i>Coffee Break</i>	
SESSION 11			
11:20	11:40	Trajectory Planner for Type II Singularities Avoidance based on Output Twist Screws	J.L. Pulloquina, R.J. Escarabajal, M. Vallés, Á. Valera, V. Mata
11:40	12:00	Kinematically Adapted Sampling-based Motion Planning Algorithm for Robotic Manipulators	A. Shahidi, T. Kinzig, M. Hüsing, B. Corves
12:00	12:20	Robotic Analysis Methodology for Multidirectional Additive Manufacturing Process Configuration	M. Schmitz, F. Menz, M. Hüsing B. Corves
12:20	12:40	An Artificial Potential Field Algorithm for Path Planning of Redundant Manipulators based on Navigation Functions	I. Soodmand, M. Keppach, S. Herrmann, C. Woernle, R. Bader
12:40	13:00	Reactive Locomotion of a Hexapod for Navigation across Irregular Ground	J. Coelho, B. Dias, G. Lopes, F. Ribeiro, P. Flores
		Trajectory Tracking by Fuzzy-based Super-Twist Sliding Mode Control of a Parallel PnP Robot	G. Wu, H. Shen
13:00	15:00	<i>Farewell Reception</i>	
		<i>Boat Trip</i>	