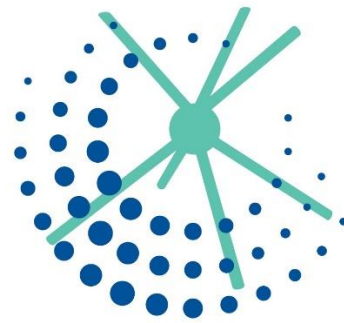


CableCon2014

Second International Conference on Cable-Driven Parallel Robots



Program

Sunday, August 24

19:00h – 21:00h Welcome Reception

Monday, August 25

08:45h – 09:20h Registration

09:20h – 09:40h Opening & Welcome by the Dean of the Faculty of Engineering

09:40h – 10:40h Technical Session: Modeling (1) (Chair: Tobias Bruckmann)

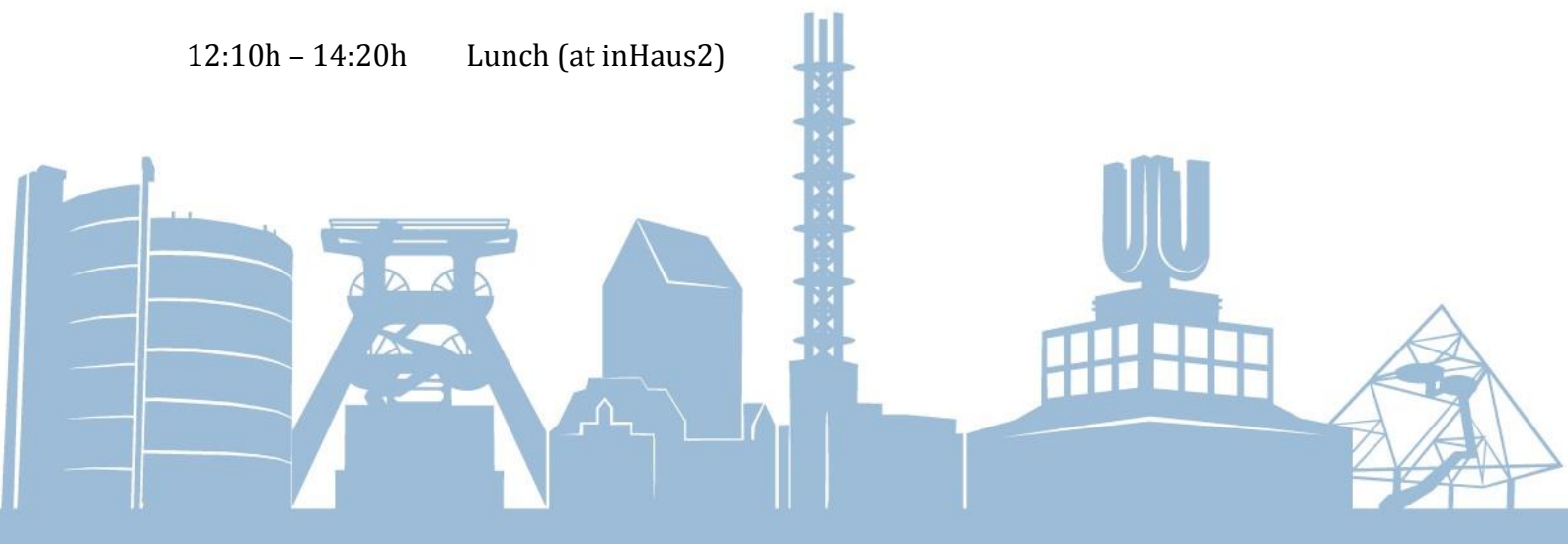
- *Jean-Pierre Merlet*: The Forward Kinematics of Cable-Driven Parallel Robots with Sagging Cables
- *Philipp Miermeister, Werner Kraus, Tian Lan, Andreas Pott*: An Elastic Cable Model for Cable-Driven Parallel Robots Including Hysteresis Effects
- *Dinh Quan Nguyen, Marc Gouttefarde*: On the Improvement of Cable Collision Detection Algorithms

10:40h – 11:10h Coffee Break

11:10h – 12:10h Technical Session: Modeling (2) (Chair: Marco Carricato)

- *Alessandro Berti, Jean-Pierre Merlet, Marco Carricato*: Workspace Analysis of Redundant Cable-Suspended Parallel Robots
- *Hui Li*: On the Static Stiffness of Incompletely Restrained Cable-Driven Robot
- *Micael Michelin, Cédric Baradat, Dinh Quan Nguyen, Marc Gouttefarde*: Simulation and Control with XDE and Matlab/Simulink of a Cable-Driven Parallel Robot (CoGiRo)

12:10h – 14:20h Lunch (at inHaus2)



14:20h – 15:00h Technical Session: Application (1) (Chair: Marc Gouttefarde)

- *Lorenzo Gagliardini, Stéphane Caro, Marc Gouttefarde, Philippe Wenger, Alexis Girin*: A Reconfigurable Cable-Driven Parallel Robot for Sandblasting and Painting of Large Structures
- *Ana Lucia Cruz Ruiz, Stéphane Caro, Philippe Cardou, François Guay*: ARACHNIS: Analysis of Robots Actuated by Cables with Handy and Neat Interface Software

15:00h – 15:30h Coffee Break

15:30h – 16:30h Technical Session: Accuracy (Chair: Jean-Pierre Merlet)

- *Valentin Schmidt, Werner Kraus, Andreas Pott*: Presentation of Experimental Results on Stability of a 3 DOF 4-Cable-Driven Parallel Robot without Constraints
- *Clément Gosselin, Simon Foucault*: Experimental Determination of the Accuracy of a Three-DOF Cable-Suspended Parallel Robot Performing Dynamic Trajectories
- *Dragoljub Surdilovic, Jelena Radojicic, Nick Bremer*: Efficient Calibration of Cable-Driven Parallel Robots with Variable Structure

16:30h – 23:00h Social Program: Visit to Zeche Zollverein (World Heritage)
<http://www.zollverein.de/>

- 16:45h Meeting at inHaus2 Entrance and Bus Transfer
- 18:00h Guided Tour “About Coal and Miners”
- 19:30h Gala Dinner at Casino Zollverein

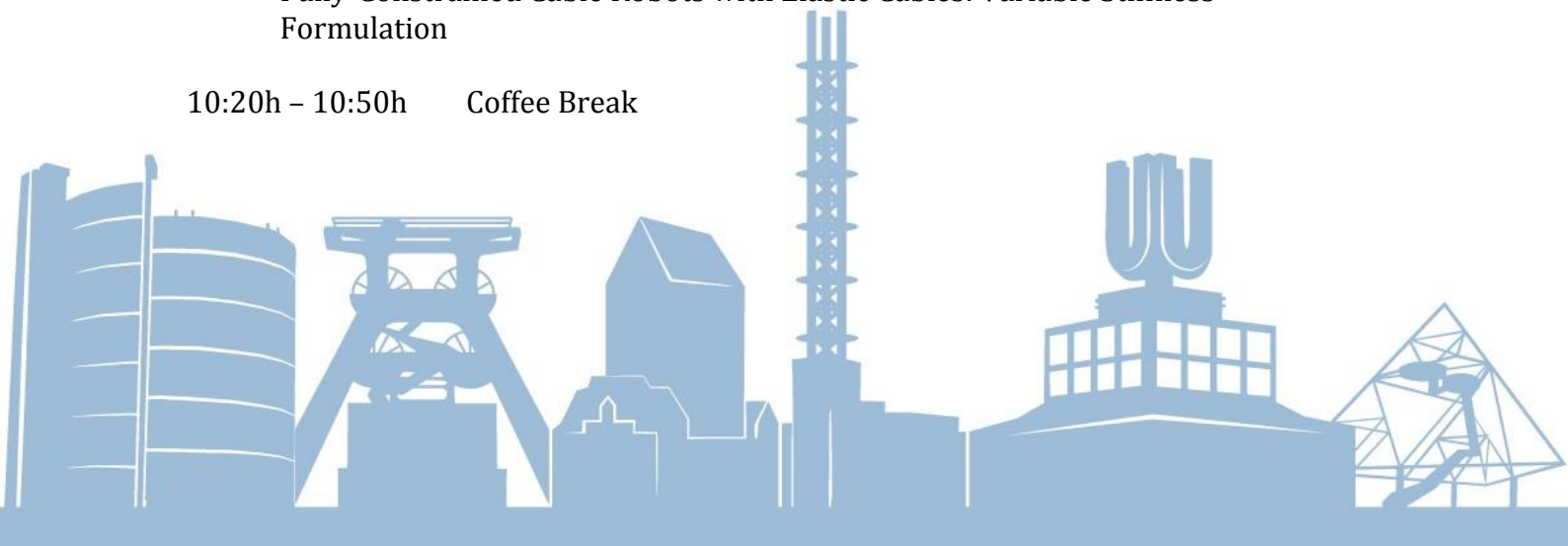
Tuesday, August 26

09:00h – 09:20h Welcome

09:20h – 10:20h Technical Session: Control (1) (Chair: Andreas Pott)

- *Christopher Reichert, Katharina Müller, Tobias Bruckmann*: Robust Internal Force-based Impedance Control for Cable-driven Parallel Robots
- *Reza Babaghasabha, Mohammad A. Khosravi, Hamid D. Taghirad*: Adaptive Control of KNTU Planar Cable-Driven Parallel Robot with Uncertainties in Dynamic and Kinematic Parameters
- *Mohammad A. Khosravi, Hamid D. Taghirad*: Dynamic Analysis and Control of Fully-Constrained Cable Robots with Elastic Cables: Variable Stiffness Formulation

10:20h – 10:50h Coffee Break



10:50h – 12:10h Technical Session: Control (2) (Chair: Phillippe Cardou)

- *Gamal El-Ghazaly, Marc Gouttefarde*: Adaptive Terminal Sliding Mode Control of a Redundantly-Actuated Cable-Driven Parallel Manipulator: CoGiRo
- *Werner Kraus, Alexander Mangold, Wei Yang Ho, Andreas Pott*: Haptic Interaction with a Cable-Driven Parallel Robot using Admittance Control
- *Ryad Chellal, Loïc Cuvillon, Edouard Laroche*: A Kinematic Vision-Based Position Control of a 6-DoF Cable-Driven Parallel Robot
- *Katharina Müller, Christopher Reichert, Tobias Bruckmann*: Analysis of a Real-Time Capable Cable Force Computation Method

12:10h – 14:00h Lunch (at inHaus2)

14:00h – 15:00h Lab Tour:
Cable-Driven Parallel Robots; Simulators

15:00h – 15:30h Coffee Break

15:30h – 16:10h Technical Session: Control (3) (Chair: Seong Young Ko)

- *Saeed Abdolshah, Giulio Rosati*: First Experimental Testing of a Dynamic Minimum Tension Control (DMTC) for Cable Driven Robots
- *Amber Emmens, Stefan Spanjer, Just Herder*: Modeling and Control of a Large-span Redundant Surface Constrained Cable Robot with a Vision Sensor on the Platform

16:10h – 16:50h Technical Session: Application (2) (Chair: Just Herder)

- *Darwin Lau, Jonathan Eden, Saman Halgamuge, Denny Oetomo*: Cable Function Analysis for the Musculoskeletal Static Workspace of a Human Shoulder
- *XueJun Jin, Dae Ik Jun, Xuemei Jin, Jeong-an Seon, Andreas Pott, Sukho Park, Seong Young Ko, Jong-Oh Park*: An Upper Limb Rehabilitation Using a Planar Cable-driven Parallel Robot with Various Rehabilitation Strategies

17:00h – 22:00h Social Program: Boat Excursion to Duisburg Harbor with Dinner

- 17:00h Transfer by Public Bus
- 18:00h Start of Tour and Dinner

Wednesday, August 27

09:00h – 10:00h Networking Opportunities

10:00h – 10:30h Coffee Break

10:30h – 11:30h Guided Tour through inHaus2
(Research Center for Intelligent Room and Building Systems)

