Third International Conference on Cable-Driven Parallel Robots (CableCon2017)
Program

Note: The locations of the events are indicated between parentheses. See the table at the end of the program for the details of the locations.

Tuesday, August 1
17:00 Registration and welcome gathering (VCH-Atrium)
18:00 Buffet with sandwiches, salads, drinks etc (VCH-Atrium)

Wednesday, August 2
08:15 Registration (GHK-2320)
08:40 Opening remarks (GHK-2320)
08:50 Keynote address I: Prof. Sunil K. Agrawal (GHK-2320)

Displacement Analysis I (GHK-2320)
09:50 Direct Kinematics of CDPR with Extra Cable Orientation Sensors: the 2 and 3 Cables Case with Perfect Measurement and Ideal or Elastic Cables (J.-P. Merlet)
10:10 Improving the Forward Kinematics of Cable-Driven Parallel Robots Through Cable Angle Sensors (X. Garant, A. Campeau-Lecours, P. Cardou, C. Gosselin)
10:30 Coffee break

Modelling I (GHK-2320)
10:50 Manipulator Deflection for Optimum Tension of Cable-Driven Robots with Parameter Variations (L. Notash)
11:10 Sensitivity Analysis of the Elasto-Geometrical Model of Cable-Driven Parallel Robots (S. Baklouti, S. Caro, É. Courteille)

11:30 CASPR-ROS: A Generalised Cable Robot Software in ROS for Hardware (J. Eden, C. Song, Y. Tan, D. Oetomo, D. Lau)

12:00 Lunch (ABP-Cafeteria)

**Trajectory Planning and Control I (GHK-2320)**

13:30 Rest-to-Rest Trajectory Planning for Planar Underactuated Cable-Driven Parallel Robots (E. Idà, A. Berti, T. Bruckmann, Marco Carricato)

13:50 Dynamically-Feasible Elliptical Trajectories for Fully Constrained 3-DOF Cable-Suspended Parallel Robots (G. Mottola, C. Gosselin, M. Carricato)

14:10 Dynamic Transition Trajectory Planning of Three-dof Cable-Suspended Parallel Robots (X. Jiang, C. Gosselin)

14:30 Coffee break

**Applications I (GHK-2320)**

14:50 Preliminary Running and Performance Test of the Huge Cable Robot of FAST Telescope (H. Li, J. Sun, G. Pan, Q. Yang)


15:30 Inverse Kinematics for a Novel Rehabilitation Robot for Lower Limbs (A. Badi, M. Saad, G. Gauthier, P. Archambault)

**Social Activities**

16:00 Quebec City tour by bus (departure location TBD)

17:30 Cocktail reception (Château Frontenac, Saint-Louis room)
Thursday, August 3

Displacement Analysis II (GHK-2320)

08:50 A New Approach to the Direct Geometrico-Static Problem of Cable Suspended Robots Using Kinematic Mapping (M. Husty, J. Schadlbauer, P. Zsombor-Murray)

09:10 Initial Length and Pose Calibration for Cable-Driven Parallel Robots with Relative Length Feedback (D. Lau)

09:30 Static Analysis and Dimensional Optimization of a Cable-Driven Parallel Robot (M. Newman, A. Zygielbaum, B. Terry)

Modelling II (GHK-2320)

09:50 Assumed-Mode-Based Dynamic Model for Cable Robots with Non-Straight Cables (J. I. Ayala Cuevas, E. Laroche, O. Piccin)

10:10 Modelling of Flexible Cable-Driven Parallel Robots using a Rayleigh-Ritz Approach (H. A. Godbole, R. J. Caverly, J. Forbes)

10:30 Coffee break

Workspace Analysis (GHK-2320)

10:50 Determination of the Cable Span and Cable Deflection of Cable-Driven Parallel Robots (A. Pott)

11:10 Geometric Determination of the Cable-Cylinder Interference Regions in the Workspace of a Cable-Driven Parallel Robot (A. Martin, S. Caro, P. Cardou)

11:30 Twist Feasibility Analysis of Cable-Driven Parallel Robots (S. Lessanibahri, M. Gouttefarde, S. Caro, P. Cardou)

12:00 Lunch (ABP-Cafeteria)
Trajectory Planning and Control II (GHK-2320)

13:30  Transverse Vibration Control in Planar Cable-Driven Robotic Manipulators (M. Rushton, A. Khajepour)

13:50  Application of a Differentiator-Based Adaptive Super-Twisting Controller for a Redundant Cable-Driven Parallel Robot (C. Schenk, C. Masone, H. Bülthoff, A. Pott)

14:10  Randomized Kinodynamic Planning for Cable-Suspended Parallel Robots (R. Bordalba, J. M. Porta, L. Ros)

14:30  Coffee break

Design (GHK-2320)


15:10  On Improving Stiffness of Cable Robots (C. Nelson)

15:30  Optimal Design of a High-Speed Pick-and-Place Cable-Driven Parallel Robot (Z. Zhang, Z. Shao, L. Wang, A. J. Shih)

Social Activities

16:00  Guided visit of the Huron-Wendat Museum (departure location TBD)

17:30  Cocktail reception (Hôtel-Musée Premières Nations)

18:30  Conference banquet (Restaurant la Traite)

Friday, August 4

08:30  Keynote address II: Prof. Meyer Nahon (GHK-2320)
Modelling III (GHK-2320)

09:30 A Polymer Cable Creep Modeling for a Cable-Driven Parallel Robot in a Heavy Payload Application (J. Piao, X. Jin, E.-P. Choi, J.-O. Park, C.-S. Kim, J. Jung)

09:50 Bending Fatigue Strength and Lifetime of Fiber Ropes (M. Wehr, A. Pott, K.-H. Wehking)

10:10 Bending Cycles and Cable Properties of Polymer Fiber Cables for Fully Constrained Cable-Driven Parallel Robots (V. Schmidt, A. Pott)

10:30 Coffee break

Tension Distribution (GHK-2320)


11:10 Tension Distribution Algorithm for Mobile Cable-Driven Parallel Robots (T. Rasheed, P. Long, D. Marquez-Gamez, S. Caro)

11:30 Improvement of cable tension observability through a new cable driving unit design (M. Rognant, É. Courteille)

12:00 Lunch (ABP-Cafeteria)

Applications II (GHK-2320)

13:30 On the Design of a Novel Cable-Driven Parallel Robot Capable of Large Rotation About One Axis (A. Fortin-Côté, C. Faure, L. Bouyer, B. J. McFadyen, C. Mercier, D. Laurendeau, M. Bonenfant, P. Cardou, C. Gosselin)

13:50 Concept Studies of Automated Construction Using Cable-Driven Parallel Robots (T. Bruckmann, C. Reichert, M. Meik, P. Lemmen, A. Spengler, H. Mattern, M. König)

14:10 Design and Analysis of a Novel Cable-Driven Haptic Master Device for Planar Grasping (K. Jadhao, P. Lambert, T. Bruckmann, J. L. Herder)

14:30 Coffee break
14:50 Tour of the Laboratoire de robotique (departure from GHK-2320, rooms PLT-3702, PLT-00370, PLT-00136)

16:30 Closing remarks (PLT-Main hall)
Campus Map

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<tr>
<th>Abbreviation</th>
<th>Building Name</th>
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<tbody>
<tr>
<td>ABP</td>
<td>Abitibi-Price Building</td>
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<tr>
<td>PLT</td>
<td>Adrien-Pouliot Building</td>
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<td>GHK</td>
<td>Gene-H.-Kruger Building</td>
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<tr>
<td>VCH</td>
<td>Alexandre-Vachon Building</td>
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800/801 bus stop towards hotels, shopping malls
800/801 bus towards Old Québec

Le Point (information)

LIMITES
Campus universitaire
ESPACES BÂTIS
Bâtiments existants
ESPACES DE CIRCULATION
Réseau piétonnier et cyclable
Réseau routier
Stationnements de surface
ESPACES VERTS ET RÉCRÉATIFS
Espaces verts boisés
Espaces verts gazonnés
Installations sportives
Jardins communautaires
Parcelles expérimentales
Plans et cours d’eau

0          50        100                   200
Mètres