

The 13th Symposium on Theory of Machines and Mechanisms

Date: July 12, 2007

Place: Conference Room 304, 3rd Floor, Ishikawadai 3 Bldg. ,
Tokyo Institute of Technology (Ohokayama Campus)
2-12-1 Ohokayama, Meguro-ku, Tokyo 152-8552
(8 min. walk from Ohokayama Station, Tokyu Meguro-line and Ohimachi-line)

Program:

8:25 Opening Address by Yoshihiko NAKAMURA
President, Jc-IFTToMM (Univ. of Tokyo)

Session 1 : Parallel Mechanism (8:30-9:50)
Chair: Yoshihiko NAKAMURA (Univ. of Tokyo)

8:30 Performance Evaluation of Kinematic and Static Characteristics and Optimal Design of 3-URU-type Pure Rotational Parallel Mechanism

*Shuta HANAGASAKI (Tokyo Tech.), Yukio TAKEDA and Syamsul HUDA

8:50 Optimal Design of a 3-5R Translational Spatial Parallel Mechanism with Utility Workspace

*Masataka TANABE (Tokyo Tech.), Yukio TAKEDA and Syamsul HUDA

9:10 Sensitivity Analysis of a 3-5R Type Pure Rotational Parallel Mechanism with Respect to Joint Axes Error

*Syamsul HUDA (Tokyo Tech.) and Yukio TAKEDA

9.30 Optimization Design and Evaluation of a Stewart Platform Type Leg Mechanism for Biped Walking Vehicle

*Kenji HASHIMOTO (Graduate School, Waseda Univ.), Yusuke SUGAWARA (Advanced Research Institute for Science and Engineering, Waseda Univ.), Kentaro HATTORI (Graduate School, Waseda Univ.), Akihiro OHTA, Chiaki TANAKA, Terumasa SAWATO, Akihiro HAYASHI, Hun-ok LIM (Kanagawa Univ.) and Atsuo TAKANISHI (Waseda Univ.)

Session 2 : Dynamics (10:00-11:00)
Chair: Koji KIMURA (Tokyo Tech.)

10:00 Nonlinear Analysis by Higher Order Spectra - Magnetic Model -

*Hiroyuki MATSUMOTO (Institute of Technologists), Yuta ONODERA (Makita Corporation), Hisami OHISHI (Kogakuin Univ.), and Shinji YAMAKAWA

10:20 A Method to Evaluate the Modal Damping Ratio by Using the Modal Open Loop Transfer Function

*Hiroto OYAMA (National Defense Academy), Norihisa ANENAGA, Hiroyuki FUJIWARA and Osami MATSUSHITA

10:40 Dynamic Characteristics of Floating Object Measured by a Magnetic Suspension and Balance System - Rectangular Solid and Flexible Models -

* Hiroyuki FUJIWARA (National Defense Academy) and Osami MATSUSHITA

Session 3 : Kinematic and Dynamic Analyses of Mechanisms (11:10-12:10)
Chair: Koichi SUGIMOTO (Tokyo Tech.)

12:00 Rotational Angle Errors of the Tripod, Rzeppa CVJ Line and Three Dimensional Motion of the Drive Shaft

Katsumi WATANABE (Yamagata Univ.), *orikatsu KUDOH (Graduate School, Yamagata Univ.) and Katsuhiko MURAKAMI (Fanuc Ltd.)

12:20 Zero Stiffness Mechanism based on Mechanical Singularity and Its Application to Non-linear Passive Stiffness for Torque Transmission

*Masafumi OKADA (Tokyo Tech.) and Shintaro KINO

12:40 Step Climbing of In-pipe Mobile Robot with Wheel Drive Mechanism Using Planetary Gear Drive

*Toyomi MIYAGAWA (Toshiba Corporation) and Nobuyuki IWATSUKI (Tokyo Tech.)

Special Lecture 1 : (12:20-13:00)

Lecturer : Prof. Marco CECCARELLI

IFTToMM Secretary General 2004-2007, IFTToMM President 2008-2011,
Laboratory of Robotics and Mechatronics, University of Cassino, Italy

Lecture Title: What is old in what is new in MMS research

Chair : Yoshihiko NAKAMURA (Univ. of Tokyo)

13:00~14 : 20 Luncheon

- Special Lecture 2 : (14:20-15:00)
- Lecturer : Dr. Teru HAYASHI
 Technical Advisor, Ogasawara Precision Laboratory Co. Ltd.
 Former President of Jc-IFToMM, IFToMM Honorary member
 Professor emeritus, Tokyo Institute of Technology
- Lecture Title: History of IFToMM in Japan
 Chair : Haruo HOUJOH (Tokyo Tech)
- Session 4 : Actuation and Precision Measurement (15:10-16:10)
 Chair: Yukio SAITO (Tokyo Denki Univ.)
- 15:10 Development of Mobile Robot "MOLOOP" Using Hydrostatic Skelton Driving Mechanism d
 * Daisuke MARUYAMA (Tokyo Tech.), Hitoshi KIMURA, Michihiko KOSEKI and Norio INOU
- 15:30 High-Precesion Pitch Artifact to Calibrate Pitch Measureing Instruments
 * Masaharu KOMORI (Kyoto Univ.), Sonko OSAWA (Mationa Metrology Institute of Japan, AIST),
 Osamu SATO, Takashi KITEN (Kyoto Univ.), Daisuke SHIRASAKI and Toshiyuki TAKATSUJI
 (Mationa Metrology Institute of Japan, AIST)
- 15:50 Fabrication of a Micro Cilium Actuator and Its Driving Experiments
 * Nouyuki IWATSUKI (Tokyo Tech.), Koichi MORIKAWA, Yoshito NISHIDA (Graduate School,
 Tokyo Tech.) and Ryota TANABE
- Session 5 : Robotics (16:20-17:20)
 Chair: Nobuyuki IWATSUKI (Tokyo Tech.)
- 16:20 Improvement of the Lips and Tonguing Mechanisms of the Anthropomorphic Flutist Robot to
 Produce a Clear Flute Sound
 *Tetsuro YAMAMOTO (Graduate School, Waseda Univ.), Koichi TANIGUCHI, Takeshi
 NINOMIYA, Jorge SOLIS (Waseda Univ.), Kunimitsu WAKAMATSU, Akiko SATO (Tokyo Wind
 Symphony Orchestra) and Atsuo TAKANISHI (Waseda Univ.)
- 16:40 Anthropomorphic Robot Hand with Hydrostatic Actuators
 *Hiroshi KAMINAGA (Univ. of Tokyo), Taichi YAMAMOTO, Jyunya ONO
 and Yoshihiko NAKAMURA
- 17:00 The Actuator for Robotics with Learning Control of Antagonism Multi-motor System
 *Atsushi UMEMURA (Tokyo Denki Univ.), Toshimasa HANEYOSHI, Yukio SAITO
 and Hirokazu MINAI
- Session 6 : Medical and Welfare Devices (17:30-18:30)
 Chair: Norio INOU (Tokyo Tech.)
- 17:30 Acquisition Position of Myoelectric Potential Influenced on a Probablity of Motion's Estimation
 *Yoshio NISHIKAWA (Takushoku Univ.), Akihiro ADACHI, Satoshi MORITA,
 JuN KURABAYASHI (Chiba Medical Welfare College) and Yoshihito KAGAWA
 (Takushoku Univ.)
- 17:50 Study on Training System of Laparoscope Surgery and Application the Robotics of Surgery Support
 Robot
 * Toshiya SAKAI (Tokyo Denki Univ.), Yukio SAITO and Atsushi UMEMURA
- 18:10 Image Stabilization for Flourescent Microscopy of Live Cells of Small Animals
 * Sung-on LEE (Univ. of Tokyo), Yoshihiko NAKAMURA, Katsu YAMANE, Takeshi TOUJO,
 Seiya TAKAHASHI (OLYMPUS), Yoshihisa TANIKAWA and Hajime TAKAHASHI
- 18:30 Closing Address by Haruo HOUJOH
 Vice President, Jc-IFToMM(Tokyo Tech.)
- 18:35 Annual Meeting 2007 (18:35-19:20)
 Address from president:
 Yoshihiko NAKAMURA(Univ. of Tokyo)
 Chair : Nobuyuki IWATSUKI (Tokyo Tech.)
- 19:30 Wine party (19:30-21:00)
 at Room 305, 3rd Floor, Ishikawadai 3 Bldg.
 The fee is 5,000 Jpn yen and free for students.