The 11th Symposium on Theory of Machines and Mechanisms

Date: June 17, 2005

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

Program:
8:55 Opening Address by Hirofumi MIURA
   President, Jc-IFToMM (Kogakuin University)

Session 1 : Dynamics  (9:00-10:00)
   Chair: Koji KIMURA(Tokyo Tech)
   9:00 Identification of Nonlinear System by Higher Order Spectra
      *Hiroyuki MATSUMOTO(Institute of Technologists), Hisami OHISHI(Kogakuin Univ.)
      and Shinji YAMAKAWA(Kogakuin Univ.)
   9:20 A Q-value Measurement based on the Open-loop Transfer Functions for Damping Evaluation
      of AMB Rotors
      *Hiroyuki FUJIWARA(NDA), Makoto ITO(Graduate School, NDA), Kazuki IKENAGA
      (Graduate School, NDA) and Osami MATSUSHITA(NDA)
   9:40 Rotational Testing of Over-hung Rotor System and Its Evaluation with Q-value
      *Makoto ITO(Graduate School, NDA), Hiroyuki FUJIWARA(NDA) and
      Osami MATSUSHITA(NDA)

Session 2 : Simulations  (10:10-11:10)
   Chair: Masafumi OKADA(Tokyo Tech)
   10:10 Spinal Information Processing Method and Its Application to Motor Learning Support System
      *Mihoko OTAKE(Univ. of Tokyo, JST) and Yoshihiko NAKAMURA(Univ. of Tokyo)
   10:30 Control Software Simulator for Mechatronics Systems
      *Shoichi MOTOHASHI(InterDesign Technologies), Mitsunobu YOSHIDA(Toshiba) and
      Hiroshi SAKAI(Toshiba Socio-Systems)
   10:50 Reciprocal Spaces and Dual Spaces for the Analysis of Parallel Mechanisms
      *Koichi SUGIMOTO(Tokyo Tech), Hadi Tavakoli Nia(Sharif University of Technology) and
      Atsuko ENOMOTO(Hitachi)

Session 3 : Analysis of Mechanisms  (11:20-12:20)
   Chair: Takaaki OIWA(Shizuoka Univ.)
   11:20 Analyses of Three Dimensional Motion of the Drive Shaft of the Tripod, Rzeppa CVJ Line
      *Takashi MATSUURA(Graduate School, Yamagata Univ.), Katsumi WATANABE
      (Yamagata Univ.) and Katsuhiko MURAKAMI(Graduate School, Yamagata Univ.)
   11:40 A Vehicle that Moves to All Directions on One Spherical Rubber Tire
      *Tatsuro ENDO(Graduate School, Univ. of Tokyo) and Yoshihiko NAKAMURA(Univ. of Tokyo)
   12:00 Flow Control of Reciprocal Pump with a Hydraulic Lost Motion Mechanism
      *Akira NAITO(Nagaoka Univ. of Technology) and Yoshiaki KONISHI(NIKKISO)
   12:20 Luncheon

Session 4 : Measurement and Sensing  (13:50-15:10)
   Chair: Koichi SUGIMOTO(Tokyo Tech)
   13:50 Miniaturized Three-dimensional Touch Probe System Based on Fiber Optic Displacement Sensors
      *Takaaki OIWA(Shizuoka Univ.) and Toshio TANAKA(Shizuoka Univ.)
14:10 Measurement of Young's Modulus of Thin Film by Resonant Method
   *Yoshiaki FUJIGAKI(Graduate School, Kogakuin Univ.), Kenji SUZUKI(Kogakuin Univ.),
   Hirofumi MIURA(Kogakuin Univ.) and Hideaki TAKANOBU(Kogakuin Univ.)

14:30 ZMP Measurement of Biped Walking Robot with a Tactile Sensor to Detect a Center of
Two-dimensional Force Distribution
   *Takuma ARAKI(Graduate School, Univ. of Electro-Communications), Yuki YAHO(Graduate
   School, Univ. of Electro-Communications) and Makoto SHIMOJO(Univ. of
   Electro-Communications)

14:50 Dynamic Characteristics of Floating Object Measured by a Magnetic Suspension and Balance
System · Added Mass of Spherical and Ellipsoid Models ·
   *Hiroyuki FUJIWARA(NTT), Masahiro KOBAYASHI(NTT) and Osami MATSUSHITA(NTT)

15:10 Break

Session 5 : Design of Mechanisms (15:30-16:50)
   Chair: Norio INOU(Tokyo Tech)

15:30 100g-100N Robot Finger with Load-Sensitive Continuously Variable Transmission
   *Takeshi TAKAGI (Graduate School, Tokyo Tech) and Toru OMATA(Tokyo Tech)

15:50 Development of a Mechanical Prosthetic Knee Joint Which Responds on Different Walking Speeds
   *Keiichi TSUKISHIRO(Ottobock Japan)

16:10 Experimental Study on the Gear Noise Behavior of Helical Gearing System
   *Takeshi WATANABE(Fuji Heavy Industries), Yoshikazu MIYOSHI(Fuji Heavy Industries) and
   Kohei SAIKI(Fuji Heavy Industries)

16:30 Design of Shaft Drive CVT for Improvement of Efficiency and Torque Capacity
   *Yukihito NARITA(Graduate School, Tohoku Univ.), Masashi YAMANAKA(Tohoku Univ.) and
   Katsumi INOUE(Tohoku Univ.)

Session 6 : Motion Control of Robots (17:00-18:00)
   Chair: Masato YASUDA(NTT)

17:00 Motion Control of Hyper Redundant Robots by Use of Learning Control Based on Linear
Combination of Error History
   *Daisuke MATSUURA (Graduate School, Tokyo Tech), Nobuyuki IWATSUKI(Tokyo Tech) and
   Masafumi OKADA(Tokyo Tech)

17:20 Motion Control of a Casting Manipulator with a Large Working Space
   (High-Speed Casting Experiment and Its Analysis)
   Shinsuke IZUMI(Graduate School, Tokyo Tech), *Yokio TAKEDA(Tokyo Tech) and
   Masaru HIGUCHI(Tokyo Tech)

17:40 Transformable Robotic System Adapting to Mechanical Environment
   *Yosuke SUZUKI (Graduate School, Tokyo Tech), Hitoshi KIMURA(Tokyo Tech), Michihiko
   KOSEKI(Tokyo Tech) and Norio INOU(Tokyo Tech)

18:00 Closing Address by Haruo HOUJOH
   Vice President, Jc-IFToMM(Tokyo Tech)

18:05 Annual Meeting 2005 (18:05-18:40)
   Address from president:
   Hirofumi MIURA (Kogakuin University)
   Chair: Nobuyuki IWATSUKI (Tokyo Tech)

19:00 Wine party
   at Seminar Room 655, 6th Floor, Ishikawadai 1 Bldg.
   The fee is 5,000 Jpn yen and free for students.