



## The 20th Symposium on Theory of Machines and Mechanisms

Date: May 24, 2014

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:

9:55 Opening Address by Haruo HOUJOH  
President, Jc-IFTOMM (Tokyo Tech)

Session 1 : Human Support (10:00-11:00)  
Chair: Ken SASAKI (The Univ. of Tokyo)

10:00 Higher-order Spectral Analysis and Experimental Identification of Non-linear Magnetic Spring Model

\*Takayuki NAKANO (Kogakuin Univ.), Hiroyuki MATSUMOTO (Institute of Technologists), Hisami OHISHI (Kogakuin Univ.) and Shinji YAMAKAWA

10:20 Individual Examination of Accelerometers and Integrated Displacement Calculation from Acceleration Data

\*Hitoshi KIMURA (Tokyo Tech.), Koudai KATO, Norio INOU and Minoru YOSHIDA (Hakusan Corp.)

10:40 Basic Research on Swarm Intelligence

\*Yuta SHIMIZU (Kogakuin Univ.), Hideaki TAKANOBU, Kenji SUZUKI, Hirofumi MIURA and Yoshinobu INADA (Tokai Univ.)

Session 2 : Humanoid Robots (11:20-12:20)  
Chair: Yukio TAKEDA (Tokyo Tech.)

11:20 The Altered Physical Condition in a Dental Patient Robot

\*Shota HAMAGUCHI (Kogakuin Univ.), Hideaki TAKANOBU, Kenji SUZUKI, Hirofumi MIURA, Kotaro MAKI (Showa Univ.), Yoshikazu MIYAZAKI, Takeshi TANZAWA, Kenichi MIYAMOTO (Tmsuk CO. Ltd.), Yoichi TAKAMOTO, Atsuo TAKANISHI (Waseda Univ.)

11:40 Dynamics Identification of the Foot Flexible DOF of a Humanoid Robot

\*Yuya MIKAMI (Tokyo Univ. of Agriculture and Technology), Gentiane VENTURE, Thomas MOULARD (CNRS-AIST JRL) and Eiichi YOSHIDA

12:00 Research in Biped Running Robot Utilizing Pelvic Movement

- 5th Report: Hopping Robot Using Pelvic Movement and Leg Elasticity of Multi-Joint Leg -  
\*Takuya OTANI (Graduate School, Waseda Univ.), Masaaki YAHARA, Kazuhiro URYU,

Akihiro IIZUKA, Shinya HAMAMOTO, Shunsuke MIYAMAE, Kenji HASHIMOTO,  
Masanori SAKAGUCHI (Univ. Calgary), Yasuo KAWAKAMI (Waseda Univ.), Hun-Ok LIM  
and Atsuo TAKANISHI

12:20-13:50 Luncheon

Special Lecture (13:50-14:40)

Why Do Robots Resemble Creatures?

Lecturer: Prof. Koichi SUZUMORI (Tokyo Tech)

Chair: Yukio TAKEDA (Tokyo Tech)

Session 3 : Mechanisms and Accuracy (15:00-15:40)

Chair: Atsuo TAKANISHI (Waseda Univ.)

15:00 Positioning-repeatability Improvement Based on Ultrasonic Vibration for Kinematic Coupling

\*Takaaki OIWA (Shizuoka Univ.), Hirokuni SHIBAZAKI, Kenji TERABAYASHI and  
Junichi ASAMA

15:20 Precise Pipe-Bending by 3-RPSR Parallel Mechanism Considering the Effect of Springback and  
Dies Clearances

\*Shohei KAWASUMI (Graduate School, Tokyo Tech.), Yukio TAKEDA and Daisuke MATSUURA

Session 4 : Identification of Human Motion and Training Systems (16:00-17:00)

Chair: Haruo HOUJOH (Tokyo Tech.)

16:00 Feature Extraction of EEG and Motion Data Using Canonical Correlation Analysis

\*Emiko UCHIYAMA (The Univ. of Tokyo), Jyunya OBARA, Ikuo KUSAJIMA, Akihiko MURAI,  
Wataru TAKANO and Yoshihiko NAKAMURA

16:20 Research of Hand Rehabilitation Device System Which Incorporated Visual and Tactile Feedback

Takashi MORI (Graduate School, Shibaura Institute of Technology), \*Takaya SEKI,  
Yukio SAITO (Shibaura Institute of Technology) and Takashi KOMEDA

16:40 Feature Extraction of Motion by Correlation Analysis for Task Execution

\*Keisuke UMEZAWA (The Univ. of Tokyo), Wataru TAKANO and Yoshihiko NAKAMURA

17:00 Closing Address by Atsuo TAKANISHI

Vice President, Jc-IFToMM (Waseda Univ.)

17:20 Annual Meeting 2014 (17:20-18:20)

Address from president:

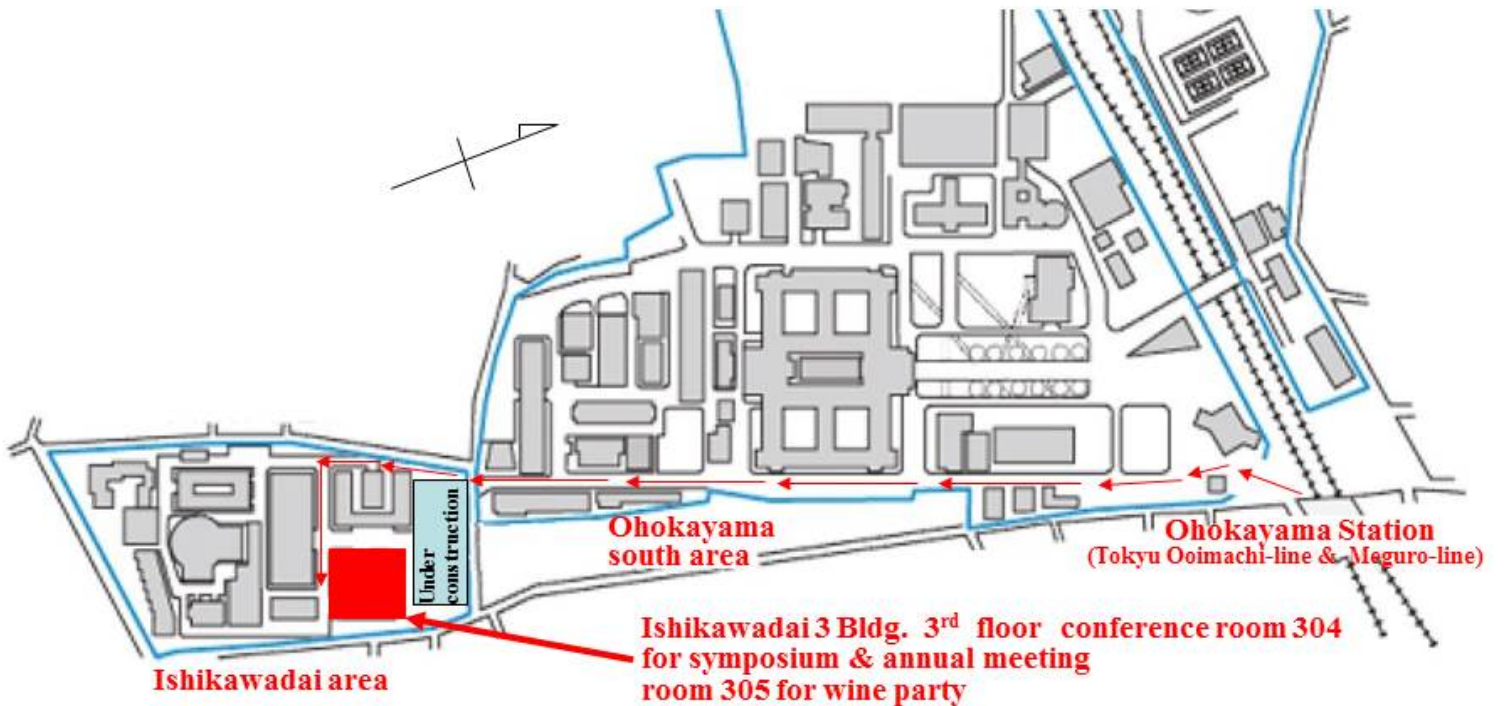
Haruo HOUJOH (Tokyo Tech.)

Chair : Yukio TAKEDA (Tokyo Tech.)

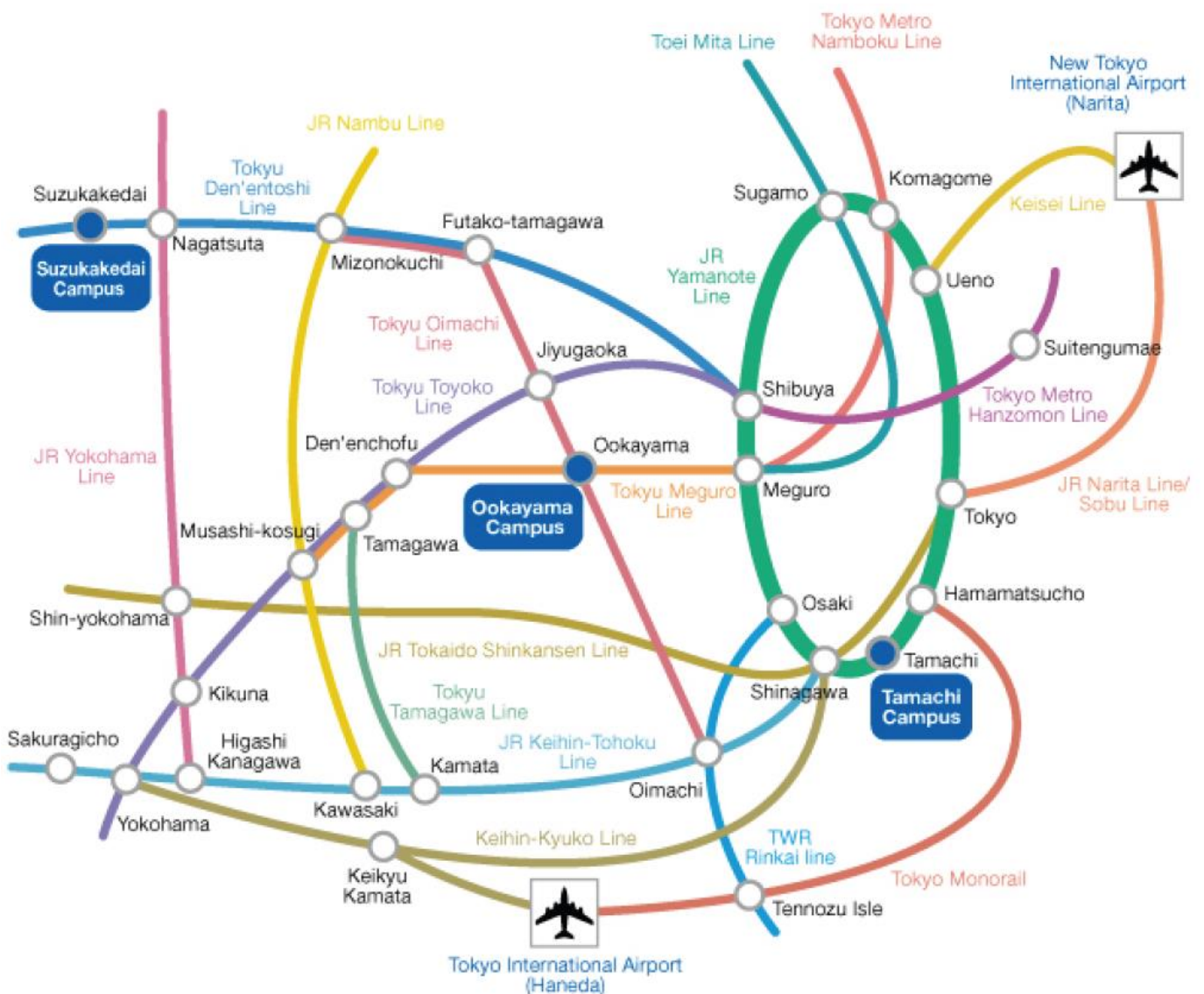
18:30 Technical networking event (18:30-19:30)

at Room 305, 3rd Floor, Ishikawadai 3 Bldg.

The fee is 5,000 Jpn yen and free for students.



**Campus map of Tokyo Tech**



**Access Map to Ohokayama Campus of Tokyo Tech**