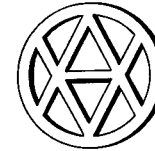


Program at a Glance

Date	Time	Room 903	Room 904	Room 905
April 8 Wednesday		9:30-19:00: Technical Visit (Bus Tour, Yamanashi Test Track)		
		17:00-21:00: Registration (Lobby)		
	19:00-21:00	Welcome Party		
April 9 Thursday	9:00-9:30		Registration (Lobby)	
	9:30-10:45		Plenary Session Opening & Welcome Address, Keynote Speeches	
	10:45-11:00	<Break>		
	11:00-12:20		Oral Session (1) <i>Control Systems for Magnetic Levitation</i> CS-2-4,14	Oral Session (2) <i>Linear Induction Motors</i> LM-1-4
	12:20-13:20	<Lunch>		
	13:20-15:20	Poster Session (1) AP-13-18, CS-1,10-13, LM-10-19, ML-5,7-10, NA-8-17		
	15:20-15:30	<Break>		
	15:30-17:10		Oral Session (3) <i>Magnetic Levitation Systems</i> ML-1-4	Oral Session (4) <i>Linear Motors & Actuators</i> LM-5-8, 24
	18:00-20:00	Banquet (Room Orion of Hotel Nikko Tokyo)		
	April 10 Friday	9:30-12:00		Oral Session (5) <i>Applications of Linear Drives (1)</i> AP-1, 3-7
12:00-13:00		<Lunch>		
13:00-15:00		Poster Session (2) AP-19-26, CS-15,16,18-20, LM-20-23,25-29, ML-11-15, NA-18-26		
15:00-15:10		<Break>		
15:10-16:50			Oral Session (7) <i>Applications of Linear Drives (2)</i> AP-8-12	Oral Session (8) <i>Control Systems for Linear Drives</i> CS-5-9
16:50-17:00		<Break>		
17:00-17:30			Closing Remarks	

FINAL PROGRAM



The Second International Symposium on

Linear Drives for Industry Applications

**LDIA'98
Tokyo**

April 8 - 10, 1998

Tokyo, Japan

Sponsored by:

The Institute of Electrical Engineers of Japan

In cooperation with:

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Secretary:

Date & Site of the Symposium

Date: April 8-10, 1998

Site: TFT (Tokyo Fashion Town) Building East-9F
 3-1, Ariake, Kohto, Tokyo 135-8071, JAPAN
 Phone: +81-3-5530-5001 (TFT Inc. office)

Registration

April 8 (Wed.) 17:00 - 21:00
 April 9 (Thu.) 9:00 - 17:00
 April 10 (Fri.) 9:00 - 16:00

General registration fee is 45,000 Yens, including proceedings and banquet. Those who have already made the registration to Maglev'98 should pay 28,000 yen for full registration.

Official Language

The official language of the symposium is English.

Technical Visit

See the attached sheet.

Welcome Party

A welcome party will be held in the Room 903 of the symposium site from 19:00 to 21:00 on April 8 (Wed.). All participants and their guests are invited free of charge.

Banquet

A Banquet will be held in the Room Orion of Hotel Nikko Tokyo starting at 18:00 on April 9 (Thu.). All General participants are invited free of charge. Extra tickets for their accompanying persons and student participants are available at 10,000 yens/person.

Accompanying Persons Program

There is no program for the accompanying persons. There are many sightseeing tours of Tokyo. Please ask the secretariat for any help you need.

Late News

The most recent information about the symposium can be obtained on the Web page. Please refer <http://www.eml.ee.musashi-tech.ac.jp/ldia> and the related (linked) pages.

Authors information

Oral Presentations

All speakers for a session are required to meet their session chairperson half an hour before the opening of the session. The chairperson will confirm your presentation, and local requirement for your presentation may be offered. Biographical information form should be submitted to the chairperson at this meeting. You will be able to find the chairperson rather easily, but if you unfortunately cannot, please make a contact with the secretariat. You can use one Over Head Projector(OHP) for transparencies or one Slide Projector. Slides should be numbered, and submitted to the slide reception desk at the symposium site at least half an hour before the opening of the session. Video projections are also available at the symposium site. There will be no problem for the domestic speakers, however, foreign presenters are recommended to contact the symposium secretariat sufficiently before the presentation to avoid the possible problems on the projection. If you wish to use the visual aids other than described above, please consult the Secretariat. The most careful attention should be paid on the time of your presentation, programmed for only 15 minutes, plus 5 minutes for questions. Please leave pure 5 minutes for the questions, because your answer would be more informative for the audience. The time might be changed by the session chairperson, according to the time management of the whole symposium.

Poster Presentations

Please contact the front desk at the session room before you start to mount your poster. Thumbtacks will be available at the desk. Attach your materials to the panels assigned by the symposium secretariat. The program number of your poster presentation is indicated at the upper-left corner of the panel. Speakers are expected to be present at their poster display during the session time. The only official language for poster displays is English. All materials to be mounted on the panel should have description in English.

Date	Mounting Time	Session Time	Removal Time
April 9 (Thu.)	12:20-13:20	13:20-15:20	15:20-15:50
April 10 (Fri.)	12:00-13:00	13:00-15:00	15:00-15:30

Authors are requested to follow the above schedule in mounting their posters on their assigned panels. Please note that the removal time must be strictly adhered to, as posters which are left on display beyond the time will be discarded.

LDIA'98 Secretariat:

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Phone: +81-3-3703-3111 ext.2764
Telefax: +81-3-5707-2212
E-mail: ldia98@eml.ee.musashi-tech.ac.jp

General Information

Climate

It is mid-spring and one of the best seasons in Tokyo during the symposium. You will see many cherry blossoms blooming everywhere. It is mostly fine, but sometimes rains. Temperature varies between 10 and 18 degs. C (50 and 64 degs. F), so overcoat is no more needed. Slightly low temperature is expected in Yamanashi area (Technical Visit) between 8 and 17 degs. C.

Currency Exchange

Only Japanese Yen is acceptable at regular stores. You can exchange the currency in international airports and foreign exchange banks. Many branches of the banks exists in the downtown area of Tokyo (e.g. Shinbashi), and also you can find some near the symposium site.

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We can accept only Japanese Yen by cash at the conference desk. Major credit cards are acceptable at the hotels and shops.

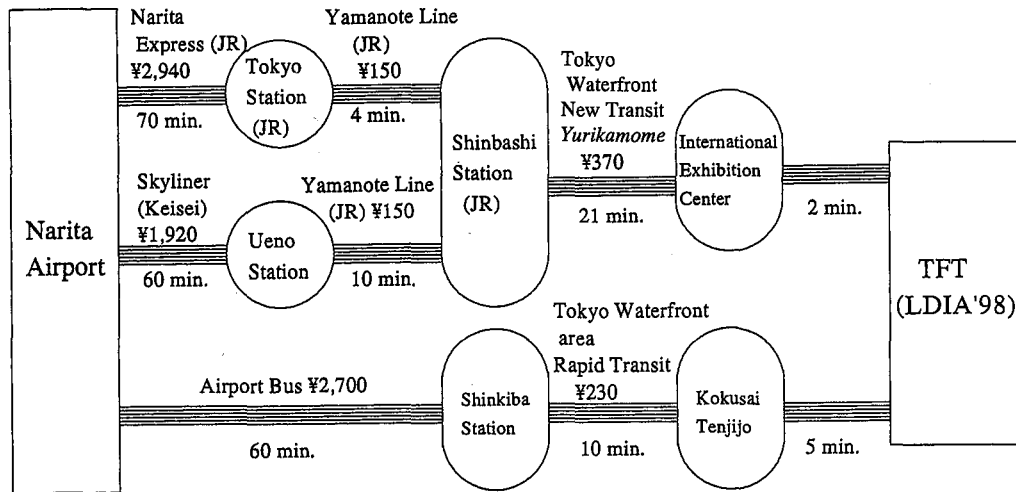
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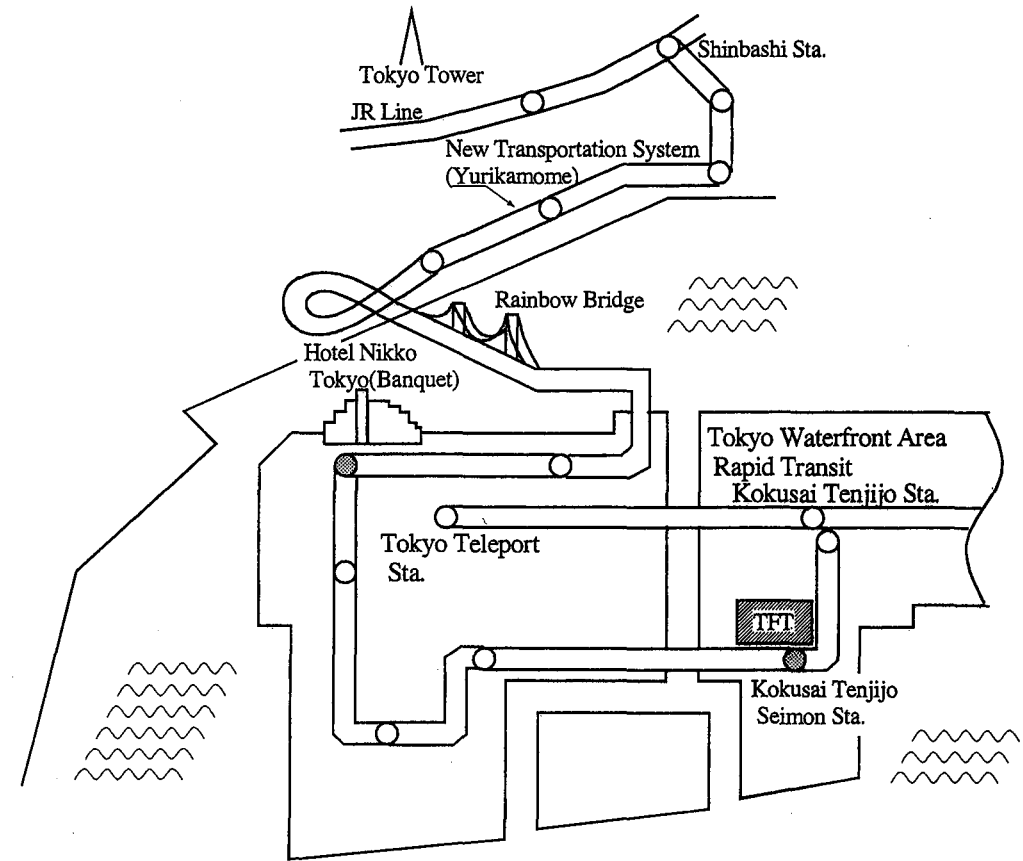


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Routes to (Tokyo Fashion Town) TFT



Technical Program

9:30-19:00, Wednesday, April 8 : Technical Visit

Bus Tour to Yamanashi Test Track of the Superconducting Maglev

19:00-21:00, Wednesday, April 8 : Welcome Party <Room 903>

9:30-10:45, Thursday, April 9 : Plenary Session <Room 904 & 905>

9:30-9:45 Opening & Welcome Address

Chairperson: Prof. Ohsaki, H.(The Univ. of Tokyo, Japan)

Opening Address: Prof. Yamada, H.(Chairperson, Organizing Committee, Shinshu Univ., Japan)

Welcome Address: Prof. Masada, E.(President, The Institute of Electrical Engineers in Japan, The Univ. of Tokyo, Japan)

9:45-10:45 Keynote Speeches

Chairperson: Prof. Ohsaki, H.(The Univ. of Tokyo, Japan)

KN-1 Status of Linear Permanent Magnet and Reluctance Motor Drives in Europe (Invited)

Howe, D., Zhu, Z.Q.(Univ. of Sheffield, U.K.)

KN-2 Linear Actuators by Piezo Electric Materials and Electrostatic Force (Invited)

Higuchi, T.(The Univ. of Tokyo, Japan)

11:00-12:20, Thursday, April 9 <Room 904> : Oral Session (1)

Control Systems for Magnetic Levitation

Co-Chairperson: Prof. Trapanese, M.(Univ. di Palermo, Italy)

Co-Chairperson: Prof. Hikihara, T.(Kyoto Univ., Japan)

CS-2 Control of an Elastic Guideway Using Linear Drives

Reckmann, H., Popp, K., Ruskowski, M.(Universitat Hannover, Germany)

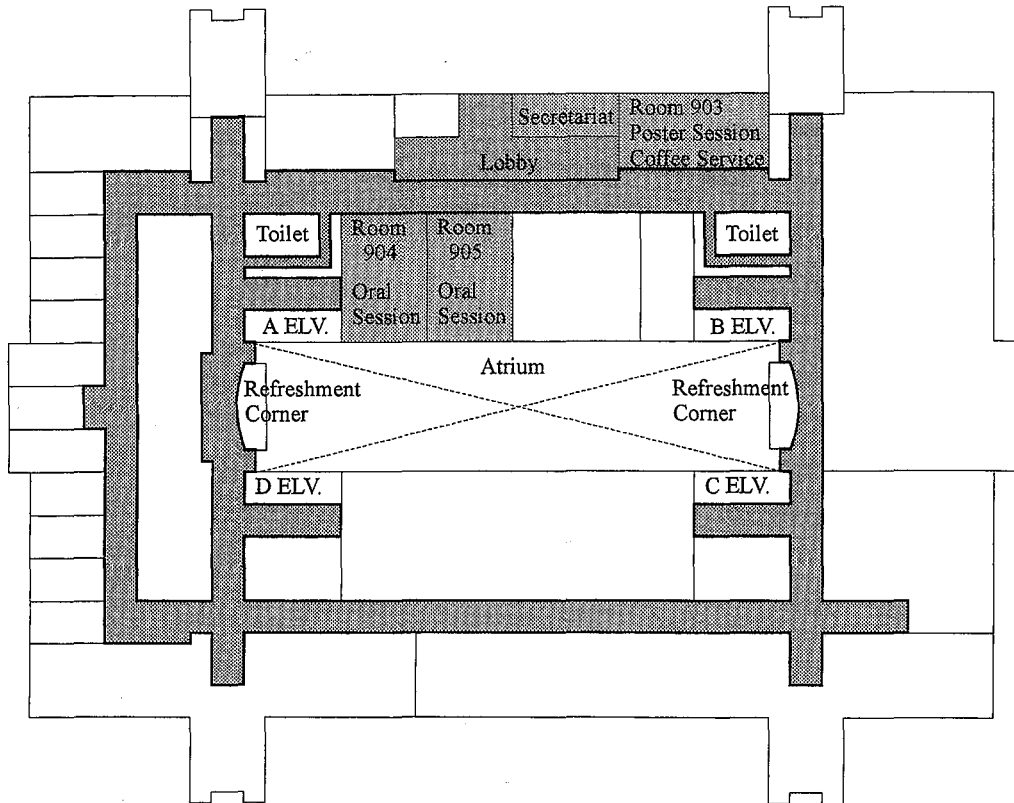
CS-3 A Montecarlo-Like Approach to the Design and Optimization of Fuzzy Controller for Magnetically Levitated System

Trapanese, M.(Univ. di Palermo, Italy)

CS-4 A Gravity Compliant Guide System for Magnetically Levitated Plates

Morishita, M., Akashi, M.(Toshiba Corp., Japan)

TFT (Tokyo Fashion Town) Building
9th Floor



- CS-14 Motion Control of Linear Induction Motors Using Novel Repetitive Control Method
Oyama, J., Higuchi, T., Abe, T., Nakashima, K., Yamada, E. (Nagasaki Univ., Japan)

11:00-12:20, Thursday, April 9 : <Room 905> : Oral Session (2)

Linear Induction Motors

Co-Chairperson: Prof. Gieras, J.F.(Univ. of Cape Town, South Africa)

Co-Chairperson: Prof. Koseki, T.(The Univ. of Tokyo, Japan)

- LM-1 Simplified Fourier Transform Method of LIM Analyses based on Space Harmonic Method
Nonaka, S. (Kinki Univ., Japan)
- LM-2 Analysis of Cage Type Linear Induction Motor with Ladder-shaped Pole-pitch Conductors
Fujii, N. (Kyushu Univ., Japan)
- LM-3 Driving Characteristics of Single-sided Linear Induction Motor with Alterable Pole-Pitch in the Primary Winding
Onuki, T., Jeon, W., Tanabiki, M., Katoh, S. (Waseda Univ., Japan)
- LM-4 Linear Induction Motor for Single Phase Reticulation Systems
Gieras, J.F., Diale, P.K., Munyay, P.R.M. (Univ. of Cape Town, South Africa)

13:20-15:20, Thursday, April 9 <Room 903> : Poster Session (1)

Applications of Linear Drive Systems

- AP-13 Regarding the Expedience to Use Linear Low Speed Asynchronous Motors for Elevator Door Operators
Garber, V.A., Gerasimov, N.P., Kaverin, A.V., Tarasov, A.V. (Otis St. Petersburg, Russia), Koskin, Y.P. (St. Petersburg State Univ., Russia)
- AP-14 Research and Application of the Punching Machine Driven by Linear Induction Motor
Ye, Y.Y., Chen, Y.X. (Zhejiang Univ., P.R.China), Yang, X.C. (Hangzhou Yuheng Electric Co., P.R.China)
- AP-15 The Method of Design for Linear Induction Motor for The Conveyer Belt to Improve Thrust Force and Efficiency
Shirai, Y., Mori, Y., Watada, M., Torii, S., Ebihara, D. (Musashi Inst. of Tech., Japan)

- AP-16 On The Design of Single-Sided Linear Induction Motors for Maglev Vehicles
Higuchi, T., Morita, H. (Nagasaki Univ., Japan), Nonaka, S. (Kinki Univ. Japan), Nakamura, M., Ebizuka, R. (Toyo Denki Seizo Co., Ltd., Japan)

- AP-17 Design and Analysis of the Linear Homopolar Synchronous Motor for Integrated Magnetic Propulsion and Suspension
Jang, S.M., Jeong, S.S. (Chungnam Nat'l Univ., Korea)

- AP-18 Miniature Linear Electromagnetic Solenoid for Braille-type Display
Kano, Y., Suzuki, M., Shiratsuchi, S., Yamaguchi, M. (Tokyo Univ. of Agriculture and Tech., Japan)

Sensors & Control Systems

- CS-1 A Study on Robust and Reliable Control for the Levitation Control of the EMS MagLev System
Sung, H.K., Sung, S.Y., Kim, I.K. (Korea Inst. of Machinery and Materials Korea), Bien, Z., Kim, Y.T., Kang, D.O., Yang, S.H. (KAIST, Korea), Kim, K.H. (Korea Electro Technology Research Inst., Korea)
- CS-10 Displacement Sensor for Small Linear Drive in Local Machining Station
Furutani, K., Mohri, N. (Toyota Tech. Inst., Japan), Higuchi, T. (The Univ. of Tokyo)
- CS-11 Accuracy Enhancement on a Long Scale Sensor Using Magnetostrictive Wire by Bipolar Pulse Current
Chang, X.M., Wakiwaka, H., Ezawa, M., Yamada, H. (Shinshu Univ., Japan)
- CS-12 Impedance Characteristics for Development of an Area Sensor Using Meander Coils
Wakiwaka, H., Tsuchimichi, K. (Shinshu Univ., Japan), Masaki, K., Suganuma, T. (Tamagawa Seiki Co., Ltd., Japan)
- CS-13 Vectorial Control of LIMs Taking into Account End Effects
Gentile, G., Isastia, V., Meo, S. (Univ. "Federice II", Italy), Ometto, A. (Univ. di L'Aquila, Italy), Scarano, M., Rotondale, N. (Univ. di Cassino, Italy)

Linear Motors & Actuators

- LM-10 A Linear Reciprocating Generator for Telemetry-Based Monitoring Systems
Wang, J., Wang, W., Jewell, G.W., Howe, D. (Univ. of Sheffield, UK)
- LM-11 Consideration on Magnetization Characteristics of Laminated Magnetic Materials for Linear Motor
Tang, Y., Izumi, Y., Imahori, H., Mizuno, T. (Shinshu Univ., Japan), Yamamoto, H., Shibuya, K. (Matsushita Refrigeration Co., Japan), Yamada, H. (Shinshu Univ., Japan)

- LM-12 Analysis on the Performance of Linear Induction Motors with Time Harmonics
Jang, S.M., Lee, S.H., Seo, J.H., Jeong, S.S.(Chungnam Nat'l Univ., Korea), Lee, H.G.(Korea ElectroTechnology Research Inst., Korea)
- LM-13 Characteristics of Toroidal Core Type Surface Induction Motor Compared with Linear Induction Motor
Fujii, N., Fujitake, M., Kihara, T.(Kyushu Univ., Japan)
- LM-14 A New Factor for Linear Machines End Effect Consideration
Creppe, R.C., Simone, G.A., Serni, P.J.A.(Sao Paulo State Univ., Brazil), Souza, C.R.(Univ. of Campinas, Brazil)
- LM-15 Modeling Linear Motors for Dynamic Analysis
Creppe, R.C., Simone, G.A., Serni, P.J.A.(Paulista State Univ., Brazil), Souza, C.R.(Univ. of Campinas, Brazil)
- LM-16 Sinusoidal Controlled-Current VSI for Driving Arc and Disc Linear Motors
Serni, P.J.A., Simone, G.A., Creppe, R.C.(Univ. of Bauru, Brazil), Souza, C.R.(Univ. of Campinas, Brazil)
- LM-17 Thrust Characteristics of a Rectangular Core LIM
Utsumi, T., Yamaguchi, I.(Tokai Univ., Japan)
- LM-18 A Comparison of Linear Motor Performance Supported by Air Bearing
Kajioka, M.(Tokyo Kokuokeiki K.K., Japan), Torii, S., Ebihara, D.(Musashi Inst. of Tech., Japan)
- LM-19 Improvement of Secondary Construction in the Permanent Magnet Type Linear Synchronous Motor
Onuki, T., Iwamoto, T., Watanabe, H., Akita, J.(Waseda Univ., Japan)

Magnetic Levitation

- ML-5 Minimization of Control Current by Suitable Number of Slit Fabrication in The Plate for Flywheel Energy Storage System Employing Permanent Magnet Bearing
Ohji, T., Mukhopadhyay, S.C., Iwahara, M., Yamada, S., Matsumura, F.(Kanazawa Univ. Japan)
- ML-7 Combined Lift and Propulsion System by a Linear Induction Motor for Non-contacting Steel Plate Conveyance
Hayashiya, H., Iizuka, D., Ohsaki, H., Masada, E.(The Univ. of Tokyo, Japan)
- ML-8 Levitation Characteristics of Attraction-type Magnetically Levitated Carrying System with Single-Phase Linear Motor
Ohashi, S., Asao, E., Hirane, Y.(Kansai Univ., Japan), Arakawa, T.(Matsushita Electric Industrial Co., Ltd., Japan)

- ML-9 Magnetic Levitation Control to Suppress the Elastic Vibration of Thin Steel Sheet
Ishiwatari, T., Hasegawa, T., Watada, M., Torii, S., Ebihara, D. (Musashi Inst. of Tech., Japan)
- ML-10 The Employment of Chaos Control Method in Tuned Circuits Levitator
Kaplan, B.Z.(Ben-Gurion Univ. of the Negev, Israel), Sarafian, G.(Israel Aircraft Industries, Israel)

Magnetic Field Analysis

- NA-8 A Numerical Approach for Edge Effects Evaluation in Linear Induction Motors
Delli Colli, V., Scarano, M.(Univ. di Cassino, Italy)
- NA-9 Field Analysis of Linear Induction Motor with Finite-Length Primary
Xiong, G.(Taiyuan Univ. of Tech., P.R.China), Bu, Q., Mizuno, T., Yamada, H.(Shinshu Univ., Japan)
- NA-10 Calculation and Design Specifics of Low Speed Linear Asynchronous Motors
Gerasimov, N.(Otis St. Petersburg, Russia), Koskin, Y.P.(St.Petersburg State Univ., Russia), Kofman, V.M.(Scientific-Research Institute of Electrophysical Equipment, Russia)
- NA-11 Improved Performance of a Linear Synchronous Motor by the Inclusion of an Aluminium Sheet
Jeans, C.G., Cruise, R.J., Landy, C.F.(Univ. of the Witwatersrand, South Africa)
- NA-12 Direct Two-Dimensional Analytical Thrust Calculation of Permanent Magnet Excited Linear Synchronous Machines
Mosebach, H. (TU Braunschweig, Germany)
- NA-13 Performance Calculations for a PM Hybrid Linear Stepping Motor by the Finite Element and Reluctance Network Approach
Wang, R., Gieras, J.F. (Univ. of Cape Town, South Africa)
- NA-14 Analysis of Direct Thrust Control in Permanent Magnet Type Linear Synchronous Motor by FEM
Kwon, B.I., Woo, K.I., Rhyu, S.H.(Hanyang Univ., Korea), Park, S.C.(Research Inst. of Engineering and Technology, Korea)
- NA-15 Magneto-Thermal Analysis of a Linear Drive using Coupled Electromagnetic/Heat Transfer Finite Element Analysis
Abdou, G., Tereshkovich, W.(New Jersey Inst. of Tech., USA)

NA-16 Theory and Calculation of Linear Superconducting Motors for High-Speed Transport

Gerasimov, N.(Otis St. Petersburg, Russia), Koskin, Y.P.(St. Petersburg State Univ., Russia)

NA-17 Reduction of Detent Forces in Linear Synchronous Motors

Cruise, R.J., Landy, C.F.(Univ. of the Witwatersrand, South Africa)

15:30-17:10, Thursday, April 9 <Room 904> : Oral Session (3)

Magnetic Levitation Systems

Co-Chairperson: Prof. Maki, N (Tokai Univ., Japan)

Co-Chairperson: Dr. Azukizawa, T. (Toshiba Co., Japan)

ML-1 Future Applications of Superconducting Bearings (Invited)

Moon, F.C.(Cornell Univ., USA)

ML-2 A Study on Dynamics of Flywheel Rotor Suspended by High-Tc Superconducting Bearing

Hikihara, T.(Kyoto Univ., Japan), Moon, F.C.(Cornell Univ., USA), Ueda, Y.(Kyoto Univ., Japan)

ML-3 Adaptive Levitation Control of a Linear Maglev Guide for Machine Tools

Ruskowski, M., Popp, K. (Universitat Hannover, Germany)

ML-4 Experimental Study of the Magnetic Gradient Levitation System using Bulk Superconductors and Permanent Magnets

Fukasawa, Y., Ohsaki, H., Masada, E. (The Univ. of Tokyo, Japan)

15:30-17:10, Thursday, April 9 <Room 905> : Oral Session (4)

Linear Motors & Actuators

Co-Chairperson: Prof. Howe, D.(Univ. of Sheffield, U.K.)

Co-Chairperson: Prof. Fujii, N. (Kyushu Univ., Japan)

LM-5 Method of Measuring Dynamic Characteristics for Linear Servo Motor and Comparison of their Performance

Muraguchi, Y., Karita, M., Nakagawa, H., Shinya, T., Maeda, M.(Shinko Electric Co.,Ltd., Japan)

LM-6 Driving Characteristics of the Bi-Directional Drive Microactuator

Yamagata, S., Watada, M., Torii, S., Ebihara, D.(Musashi Inst. of Tech., Japan)

LM-7 A High-Power Electrostatic Linear Servo Motor

Yamamoto, A.(The Univ. of Tokyo, Japan), Niino, T.(The Inst. Of Physical and Chemical Research, Japan), Higuchi, T.(The Univ. of Tokyo, Japan)

LM-8 Consideration on Application of Giant Magnetostrictive Material for a Disc Brake

Murata, Y., Kawase, K., Ogawa, Y.(Akebono Brake Industry Co.,Ltd., Japan), Wakiwaka, H., Yamada, H.(Shinshu Univ., Japan)

LM-24 Design, Fabrication and Performance Tests of a Voice-Coil-Type LOA for Active Control System of Structure Vibration

Jang, S.M., Jeong, S.S., Seo, J.H.(Chungnam Nat'l Univ., Korea), Moon, S.J., Park, H.C., Park, C.I., Chung, T.Y.(Korea Inst. of Machinery and Materials, Korea)

18:00-20:00, Thursday, April 9 <Hotel Nikko Tokyo 1F Orion> : Banquet

9:30-12:00, Friday, April 10 <Room 904> : Oral Session (5)

Applications of Linear Drives (1)

Co-Chairperson: Prof. Morini, A.(Univ. di Padova, Italy)

Co-Chairperson: Dr. Karita, M.(Shinko Electric Co., Japan)

AP-1 Tools for High Speed and High Acceleration Feed Drive System of NC Machine Tools ---Present and Future--- (Invited)

Kakino, Y.(Kyoto University, Japan)

AP-3 Application of 4-position Hydraulic Servo Valve Using Linear DC Motor to Press-brake

Anzai, T., Koyama, K.(Amada Engineering Center Co.,Ltd., Japan), Mizuno, T., Yamada, H.(Shinshu Univ., Japan)

AP-4 Cylindrical Linear Synchronous Motor for Forearm Support Apparatus

Yamaguchi, M., Manabe, K., Ando, Y., Kano, Y.(Tokyo Univ. of Agriculture and Tech., Japan), Kobayashi, M.(Brother Industries, Ltd., Japan)

AP-5 Modeling of Linear Motor Position System

Eidelberg, B. (Anorad Corp., USA)

AP-6 Design And Analysis of A Novel Long-Stroke Tubular Permanent Magnet Linear Motor

Hor, P.J., Zhu, Z.Q., Churn, P.M., Howe, D.(Univ. of Sheffield, U.K.), Rees-Jones, J.(Unilever Research Port Sunlight Laboratory, U.K.)

AP-7 Linear Motor Transfer Technology(LMTT) for Container Terminals

Huth, E.(Preussag Noell GmbH, Germany), Canders, W.R., Mosebach, H.(TU Braunschweig, Germany)

9:30-12:00, Friday, April 10 <Room 905> : Oral Session (6)

Magnetic Field Analysis

Co-Chairperson: Prof. Mosebach, H.(TU Braunschweig, Germany)

Co-Chairperson: Prof. Takahashi, N.(Okayama Univ., Japan)

- NA-1 Partial Adoption of the Wound Secondary Member in the Linear Induction Motor for Transportation
Onuki, T., Kamiya, Y., Yoshizawa, M., Honda, S., Iraha, T., Fukaya, K.(Waseda Univ., Japan)
- NA-2 A New Model and Performance of Single-Sided Linear Induction Motors Taking into Account the Back Iron Saturation
Cabral, C.M., Goncalves, J.G.(Univ. do Algarve, Portugal), Pappalardo, E.(Ansaldo Transporti Co., Italy), Cabrita, C.P.(Univ. da Beira Interior, Portugal)
- NA-3 Superconducting Sheets for Train Support and Traction: Finite Element Analysis
Lanzara, G., D'Ovidio, G., Masciovecchio, C., Villani, M.(Univ. of L'Aquila, Italy)
- NA-4 Prediction of Static Characteristics of Cylindrical Linear Variable-Reluctance Actuator
Corda, J.(Univ. of Leeds, UK)
- NA-5 Comparison Between Surface Mounted and Buried Permanent Magnets in Linear Synchronous Motors
Jeans, C.G., Hansa, A., Cruise, R.J., Landy, C.F.(Univ. of the Witwatersrand, South Africa)
- NA-6 Optimal Design of Permanent Magnet Type of Retarder
Takahashi, N., Natsudeda, M., Muramatsu, K.(Okayama Univ., Japan), Yamada, C., Ogawa, M., Kobayashi, S.(Isuzu Advanced Engineering Center, Ltd., Japan), Kuwahara, T.(Isuzu Motors, Ltd., Japan)
- NA-7 Dynamic Analysis of Solenoid Valve Taking into Account Discharge Current of Capacitor Using Finite Element Method
Kawase, Y., Ohta, T., Nakamura, N.(Gifu Univ., Japan)

13:00-15:00, Friday, April 10 <Room 903> : Poster Session (2)

Applications of Linear Drive Systems

- AP-19 Synchronization of the Discontinuously Arranged Linear Synchronous Motor for Transportation System
Seki, K., Oka, K., Watada, M., Torii, S., Ebihara, D.(Musashi Inst. Of Tech., Japan)

- AP-20 Economic Considerations of Linear Synchronous Motors in the South African Mining Industry
Gore, V., Cruise, R.J., Landy, C.F.(Univ. of the Witwatersrand, South Africa)
- AP-21 Energy Consumption of Linear Synchronous Machine for Rope-less Elevator
Kimura, T., Watada, M., Torii, S., Ebihara, D.(Musashi Inst. of Tech., Japan)
- AP-22 Design and Traffic Control of Multiple Cars for an Elevator System Driven by Linear Synchronous Motors
Miyatake, M., Koseki, T., Sone, S.(The Univ. of Tokyo, Japan)
- AP-23 High Speed High Accuracy Positioning System for Industrial Printer by LDM
Shiraki, M., Song, R., Itoh, A.(Shicoh Engineering Co.,Ltd., Japan), Mizuno, T., Yamada, H.(Shinshu Univ., Japan)
- AP-24 Optimisation of a Magnetic Levitation System for a Linear Drive
Groening, I., Henneberger, G.(RWTH Aachen, Germany), Wunderlich, H., Seelig, A.(Daimler-Benz Research and Tech., Germany)
- AP-25 Measurement of Rail Wearing Depth Using Reluctance Sensor with Cut-core
Watanabe, S., Mizuno, T.(Shinshu Univ., Japan), Takeshita, K.(Railway Technical Research Inst., Japan), Kimura, T., Kishimoto, S.(Hitachi Electronics Engineering Co.,Ltd., Japan), Yamada, H.(Shinshu Univ., Japan)
- AP-26 Surge Characteristics of the Mini MAGLEV Coil for Propulsion with Double-layer Arrangement
Ema, S. (Numazu College of Tech., Japan)

Sensors & Control Systems

- CS-15 Basic Properties and Vibration Experiments for a Semi-Active Damper with a Magnetic Fluid (M.R.F.) Base
Yamada, A., Sagara, N., Nakagawa, T.(Tokyo Denki Univ., Japan)
- CS-16 Multi-Objective Fuzzy Controller for Linear Motor Propulsion of MagLev Train
Yang, S.H., Kim, Y.T., Kang, D.O., Bien, Z.(Korea Advanced Inst. of Sci. & Tech., Korea), Sung, H.K., Kim, I.K.(Korea Inst. of Machinery & Materials, Korea), Lee, J.S.(Hyundai Precision & Ind. Co.,Ltd., Korea)
- CS-18 Speed Control System Behaviors of Linear Synchronous Motor Propulsion
Sakamoto, T.(Kyushu Inst. of Tech., Japan)
- CS-19 Integrated-Control Design for Maglev in Controlled-PM LSM Carrier Using SIMULINK
Yoshida, K., Takami, H., Nakahashi, Y.(Kyushu Univ., Japan), Matsumoto, S.(Hitachi Ltd., Japan)

CS-20 A Field Oriented Control for a People Mover System with Linear Induction Motor Drives
Cataliotti, A.(TU Braunschweig, Germany), Mungiguerra, V., Picardi, A.(Ansaldo Trasporti S.p.A., Italy), Pagano, E.(Univ. of Naples Federico II, Italy)

Linear Motors & Actuators

LM-20 Reluctance Equalization Design of Multi Flux-barrier Construction for Linear Synchronous Reluctance Motors
Sanada, M., Morimoto, S., Takeda, Y.(Osaka Prefecture Univ., Japan)

LM-21 Simplified Expression for Coil Inductance of a Linear DC Motor
Yajima, H., Misron, N., Wakiwaka, H.(Shinshu Univ., Japan), Minegishi, K., Fujiwara, N., Tamura, K.(SMC Corp., Japan), Nirei, M.(Nagano Nat'l College of Tech., Japan)

LM-22 Considerations on the Iron Loss of Moving Magnet Type Linear DC Motor
Mizuno, T., Nanahara, M., Iwadare, M., Wakiwaka, H., Yamada, H.(Shinshu Univ., Japan), Koyama, K., Anzai, T.(Amada Engineering Center Co.,Ltd., Japan)

LM-23 Dynamic Performance Analysis of Linear Reciprocating Moving-Magnet Actuators
Clark, R.E., Howe, D.(Univ. of Sheffield, UK)

LM-25 Structure Analysis of Four Kinds Linear Oscillatory Actuators for an Electromagnetic Pulsator
Takano, Y., Huang, Y., Matsumoto, K., Mizuno, T.(Shinshu Univ., Japan), Nishizawa, N.(Orion Machinery Co.,Ltd., Japan), Yamaguchi, M.(Tokyo Univ. of Agriculture and Tech., Japan), Yamada, H.(Shinshu Univ., Japan)

LM-26 Static and Kinetic Thrust Characteristics of Linear Oscillatory Actuator at Low and Normal Temperature
Aoki, A., Hashimoto, T., Watada, M., Torii, S., Ebihara, D., Yamane, K.(Musashi Inst. of Tech., Japan)

LM-27 Dynamics of a Long-Stroke Linear Actuator Using Optimized Current Scheduling
Ueno, T., Tani, J., Qui, J., Kosugo, K.(Tohoku Univ., Japan), Ota, A., Fukuda, S.(Furukawa Co.,Ltd., Japan)

LM-28 Characteristics of LC Resonant Type Linear Oscillatory Actuator
Ogawa, K., Iwamizu, H., Okada, H.(Oita Univ., Japan)

LM-29 Improved Electrode Design of Electrostatic Linear Motor for Ripple Reduction
Yamamoto, A.(The Univ. of Tokyo, Japan), Niino, T.(The Inst. Of Physical and Chemical Research, Japan), Higuchi, T.(The Univ. of Tokyo, Japan)

Magnetic Levitation

ML-11 Controller-less Magnetic Levitation with AC Magnetization of Electromagnet
Moriyama, S.(Kyushu Inst. of Tech., Japan)

ML-12 Stabilizing the Motion of the Superconducting Magnetically Levitated Train against Coil Quenching
Ohashi, S.(Kansai Univ., Japan), Ohsaki, H., Masada, E.(The Univ. of Tokyo, Japan)

ML-13 Design of Coil Specifications in EDS Maglev Using an Optimization Program
Murai, T., Fujiwara, S.(Railway Technical Research Inst., Japan)

ML-14 Repulsive-Mode Levitation and Propulsion Experiments of an Underwater Travelling LSM Vehicle ME02
Yoshida, K., Shi, L., Takami, H., Sonoda, A. (Kyushu Univ., Japan)

ML-15 Payload of Revolving PM Type Magnet Wheel
Fujii, N., Nonaka, S.(Kyushu Univ., Japan)

Magnetic Field Analysis

NA-18 Static Thrust Analysis of Permanent Magnet Type Linear Vernier Motor
Matsushima, Y.(Shizuoka Univ., Japan), Anazawa, Y.(Akita Univ., Japan), Ito, Y.(Hokkaido Univ., Japan), Miyashita, T.(Shizuoka Univ., Japan)

NA-19 Analysis of Thrust of Hy-brid Type Linear Vernier Motor Using the Finite Element Method
Sasaki T., Matsushima, Y.(Shizuoka Univ. Japan), Anazawa, Y.(Akita Univ., Japan), Ito, Y.(Hokkaido Univ., Japan), Miyashita, T.(Shizuoka Univ., Japan)

NA-20 Static Thrust Simulation of Linear Electromagnetic Solenoid
Mizuno, T., Yamada, H., Okui, Y., Yamada, H.(Shinshu Univ., Japan), Takahashi, T., Obuse, A.(TDS Co.,Ltd., Japan)

NA-21 Experimental Validation of a Finite Element based Dynamic Simulation Technique for Fast-Acting, Short-Stroke Linear Actuators
Harmer, K., Jewell, G.W., Howe, D.(Univ. of Sheffield, UK)

- NA-22 Pull Characteristics of Leg Type DC Electromagnets Using 3-D Nonlinear Finite Element Analysis
Ito, S., Nakano, M.(Fukuoka Inst. of Tech., Japan), Kawase, Y.(Gifu Univ., Japan)
- NA-23 FEM Aided Field Analysis of a Bearingless Machine Employing Permanent Magnets
Ohji, T., Mukhopadhyay, S.C., Iwahara, M., Yamada, S., Matsumura, F.(Kanazawa Univ., Japan)
- NA-24 Output Voltage Simulations of Magnetic Encoder Using Magnetic Charge Simulation Method
Fujita, Y., Kikuchi, Y.(Sankyo Seiki Mfg. Co.,Ltd., Japan), Shiotani, K., Wakiwaka, H., Yamada, H.(Shinshu Univ., Japan)
- NA-25 Calculating Method of Eddy Current based on the Experiment on the Electromagnetic Type Eddy Current Brake
Um, Y., Torii, S., Ebihara, D.(Musashi Inst. of Tech., Japan), Sanjo, I., Tani, Y.(Tokyo Buhin Kogyo Co.,Ltd., Japan)
- NA-26 Analysis of Magnetic Shielding Effects Using Plural Bulk of High-Tc YBCO Superconductor
Gyoda, M., Torii, S., Ebihara, D.(Musashi Inst. of Tech., Japan)

15:10-16:50, Friday, April 10 <Room 904> : Oral Session (7)

Applications of Linear Drives (2)

- Co-Chairperson: Prof. Canders, W.R.(TU Braunschweig, Germany)
Co-Chairperson: Dr. Mizuma, T.(Traffic Safety & Nuisance Research Inst., MOT, Japan)
- AP-8 Propulsion System Design for Korean Maglev Vehicle
Kim, I.K., Kim, B.S., Chung, H.K.(Korea Inst. of Machinery and Metals, Korea), Kim, G.J.(Hyundai Precision & Ind. Co.,Ltd., Korea), Pattison, L., Dawson, G.E.(Queen's Univ. Canada), Parker, J.H.(Parker & Associates Inc., Canada)
- AP-9 A Linear Homopolar Motor for a Transportation System
Evers, W., Henneberger, G.(RWTH Aachen, Germany), Wunderlich, H., Seelig, A.(Daimler-Benz Research and Tech., Germany)
- AP-10 A Proposal of Superconducting LSM Controlled-Repulsive Maglev Vehicle System with Guidance-Control Coil
Yoshida, K., Shimizu, A.(Kyushu Univ., Japan)

- AP-11 Linear Electromagnetic Pump for Automatic Wave Soldering System
Onozaki, J., Masuda, T., Saitoh, H.(Tamura Corp., Japan), Kano, Y., Yamaguchi, M.(Tokyo Univ. of Agriculture and Technology, Japan)
- AP-12 Monitoring System for Measurement of Electric Quantities of an Inverter-Fed LIM
Park, Y.T.(Korea Research Inst. of Standard and Science, Korea), Jang, S.M., Seo, J.H., Jeong, S.S., Lee, S.H.(Chungnam Nat'l Univ., Korea)

15:10-16:50, Friday, April 10 <Room 905> : Oral Session (8)

Control Systems for Linear Drives

- Co-Chairperson: Prof. Pagano, E.(Univ. of Naples "Federico II", Italy)
Co-Chairperson: Prof. Sanada, M.(Osaka Pref. Univ., Japan)
- CS-5 Fully Digital Control Systems of Linear Drives for Industrial Applications
Gentile, G., Meo, S., Pagano, E., Veneri, O. (Univ. of Naples Federico II, Italy)
- CS-6 High Performance Direct Thrust Control of Linear Induction Motor
Kwon, B.I., Woo, K.I., Kim, S., Oh, W.S.(Hanyang Univ., Korea)
- CS-7 Position Sensorless Control Scheme of the Longstator LSM using EMF Observer
Koga, S., Tanitsu, H., Kitano, J.(Central Japan Railway Co., Japan), Sogihara, H., Suzuki, Y.(Mitsubishi Electric Corp., Japan)
- CS-8 Wireless Transmission Method of Positioning Signal on Linear Synchronous Motor for Transportation
Furukawa, T., Ohmiya, S., Yamaguchi, M., Kano, Y.(Tokyo Univ. of Agriculture and Tech., Japan), Murata, K.(Tsubakimoto Chain Co., Japan)
- CS-9 Synchronous Linear Drives for Many Secondaries with Open Loop Control
Breil, J., Oedl, G., Sieber, B.(Brueckner Maschinenbau GmbH, Germany)
- 17:00-17:30, Friday, April 10 <Room 904> : Closing Remarks**
Chairperson: Prof. Kano, Y.(Tokyo Univ. of Agriculture and Tech., Japan)