Timetable of LDIA 2001

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Room A (Hakuhou I, II) (3F)</th>
<th>Room B (Hakuhou III, IV) (3F)</th>
<th>Room C (Zuihou) (3F)</th>
<th>Gallery (2F)</th>
<th>Lobby (3F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 17 (Wed)</td>
<td>16:00-19:30</td>
<td>Welcome Party</td>
<td></td>
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<tr>
<td>October 18 (Thu)</td>
<td>9:00-9:20</td>
<td>Opening Ceremony</td>
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<tr>
<td>9:25-10:15</td>
<td>Coffee Break</td>
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<tr>
<td>10:30-11:50</td>
<td>Oral Session I Linear Induction Motor I</td>
<td>Oral Session II Magnetic Levitation Technology I</td>
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<tr>
<td>13:20-15:00</td>
<td>Oral Session III Linear and Surface Motor</td>
<td>Oral Session IV Magnetic Field Analysis I</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>15:10-17:10</td>
<td>Poster Session I Linear Induction Motor II, Linear Synchronous Motor I, Magnetic Levitation Technology II</td>
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<td></td>
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<tr>
<td>17:30-19:30</td>
<td>Banquet</td>
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<tr>
<td>October 19 (Fri)</td>
<td>9:00-11:00</td>
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<tr>
<td>12:30-15:10</td>
<td>Oral Session V Transportation and Conveyance II</td>
<td>Oral Session VI Linear Synchronous Motor II</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:20-16:50</td>
<td>Oral Session VII Organized Session</td>
<td>Oral Session VIII Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00-17:30</td>
<td>Closing Remarks</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
LDIA2001 Committees

Organizing Committee

Chairperson:
Ebihara, D. (Musashi Institute of Technology)

Vice-Chairpersons:
Fujisawa, S. (Toshiba Corp.)

Advisers:
Kanada, K. (Kyoto University)
**From Tokyo to Nagano**

The Shinkansen bullet train running between Tokyo and Nagano began operations in October 1997. The high-speed train service for Nagano has really taken off with twenty-seven round trips per day; the fastest trip taking only seventy-nine minutes. The required time for Narita Airport has been shortened to two hours and twenty minutes with a transfer in Tokyo. Visitors can check in and out on the same day as their international flight.

<table>
<thead>
<tr>
<th>Train</th>
<th>Destination</th>
<th>Required time</th>
<th>Frequency</th>
<th>Fare (yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JR Narita Express</td>
<td>JR Tokyo Station</td>
<td>53 minutes</td>
<td>One every 30-60 minutes</td>
<td>¥2,940 (One way)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Train</th>
<th>Destination</th>
<th>Required time</th>
<th>Frequency</th>
<th>Fare (yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nagano Shinkansen</td>
<td>JR Nagano Station</td>
<td>79 minutes</td>
<td>One every 30-60 minutes</td>
<td>¥7,970 (One way)</td>
</tr>
</tbody>
</table>

*Nagano Shinkansen Bullet Train "Asama"

The nearest domestic airport to Nagano City is Matsumoto Airport, which is seventy minutes by express bus from Nagano City. Travel time via domestic flight includes the time from Matsumoto Airport to Nagano City.

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**Conference Information**

**LDIA2001 Secretariat:**

Dr. OHSAKI, Hiroyuki  
Department of Electrical Engineering,  
The University of Tokyo  
7-3-1 Hongo, Bunkyo-Ku, Tokyo 113-8656, JAPAN  
Phone: +81-3-5841-6727  
FAX: +81-3-5841-6067  
e-mail: ldia2001@ohsaki.t.u-tokyo.ac.jp

**Conference Date and Site**

Date: October 17-19, 2001  
Site: MIELPARQUE NAGANO  
752-8 Tsuruga-Takahata, Nagano-Shi, 380-8584, JAPAN  
Phone: +81-26-225-7802  
FAX: +81-26-225-7803

**Registration**

¥45,000: The registration fee includes attendance at all scientific programs, a copy of the proceedings, and invitation to the welcome party and the banquet. Students may register for ¥10,000. They cannot attend the banquet.

**Official Language**

The official language of the conference is English.

**Welcome Party**

A welcome party will be held in the room Hakuhou III on the 3rd floor from 18:00 through 19:30 on October 17 (Wednesday). All participants and their guests are invited free of charge.

**Banquet**

A banquet will be held in the room Hakuhou I & II on the 3rd floor from 17:30 through 19:30 on October 18 (Thursday). Regular participants are invited free of charge. Extra tickets for their guests and students are available at the registration desk.

**Exhibition**

Technical exhibition is also held in Gallery on the 2nd floor. Every participant is welcome.

**Technical Tour**

Post-Conference Tour to LinearMetro in Tokyo  
Tokyo Metropolitan Subway Line No. 12 (Oedo Line)  
Saturday, October 20, 2001

An optional technical visit to a train depot of Tokyo Metropolitan Subway Line No. 12 (Oedo Line) is planned, where inspection and maintenance of LIM-driven subway trains are performed (LIM: linear induction motor). After visiting the LinearMetro train depot, we will go to some popular sightseeing spots like Asakusa in Tokyo.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo Metropolitan Subway Kita Train Depot</td>
<td>October 20, 2001</td>
</tr>
</tbody>
</table>

**Meeting Time**

Meeting Place: Bus Station at the South Marunouchi Ext of Tokyo Station

Meeting Time: 8:45am  
Departure Time: 9:00am
INSTRUCTIONS FOR ORAL PRESENTATION

Preparation of Visual Aids
Session rooms for oral presentation are large, and we advise you to use large letters in your slides and transparencies. No more than 10 lines in a projection are informative for the audience. The session chairperson, according to the time management of the whole symposium, might change the time. The time schedule of the symposium is rather tight as you can see in the program on the following pages, because of your kind cooperation in the contribution. The session chairperson will thus be asked to keep the timetable very strictly, so we would be very glad if you help the chairperson in accomplishing the duty.

Effective way to show up your display is to use the figures and photographs effectively, especially in colors.

Show the order in which the poster is to be read clearly either by numbers, arrows, or lines.

INSTRUCTIONS FOR POSTER PRESENTATION

Preparation of Posters
The prepared display board at the site has 120 cm width. The height of the board itself is 110 cm, however, it is not recommended to use lower area. The upper-left area of the display is reserved for the program number indicated by the secretariat. Title, Name, and Affiliations should be indicated in the upper-right area, which is 20 cm height x 70 cm width. Thus the recommended area for the materials including text, figures, tables, etc. is 90 cm height x 120 cm width.

- There is no electric power source on the poster site.
- Please use larger size of letters, such as 25-30mm for the title, 15-20 mm for headings, and 7-10 mm for the text.
- Effective way to show up your display is to use the figures and photographs effectively, especially in colors.
- Show the order in which the poster is to be read clearly either by numbers, arrows, or lines.

During the Symposium
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.

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 that are left on display beyond the time will be discarded.

Preparation of Transparencies
We have the overhead projection equipment for normal letter-sized (or A4) transparencies. Use the largest projection area, normally 210 mm x 210 mm.

Slides
We do not accept slides in oral sessions.

Others Available
LCD projectors are also 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.

During the Symposium
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. The symposium is rather small, so you will be able to find the chairperson easily. If you unfortunately cannot, please contact to 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 session chairperson, according to the time management of the whole symposium, might change the time. The time schedule of the symposium is rather tight as you can see in the program on the following pages, because of your kind cooperation in the contribution. The session chairperson will thus be asked to keep the timetable very strictly, so we would be very glad if you help the chairperson in accomplishing the duty.

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# Technical Program

**October 18 (Thu) 9:00-9:20** Opening Ceremony

**October 18 (Thu) 9:25-10:15** Keynote Speech

<table>
<thead>
<tr>
<th>PL-1</th>
<th>Linear Motor Direct Drives for Industrial Applications: State of the Art and Research at the Department of Electrical Machines (IEM) Aachen Institute of Technology (RWTH), Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2</td>
<td>Evaluation Study of Velocity Characteristics of Linear Induction Motors using a Ring Model Device Maki, N., Ohta, K., Tokai University, Japan</td>
</tr>
<tr>
<td>A-3</td>
<td>Comparative Studies of Flux-Concentration Type and Normal Type Tubular Linear Induction Motor Roy, D., Akiyama, Y., Yamada, S., Iwahara, M., Kanazawa University, Japan, Basak, B., Bengal Engineering College, India</td>
</tr>
<tr>
<td>A-4</td>
<td>Design Optimization of Single-Sided Linear Induction Motors for Maglev Vehicles Higuchi, T., Nishimoto, T., Nagasaki University, Japan, Nonaka, S., Kyushu Electric College, Japan, Muramoto, H., Toyo Denki Seiko K.K., Japan</td>
</tr>
</tbody>
</table>

**October 18 (Thu) 10:30-11:50** Linear Induction Motor I (Oral) **Prof. Takeda, Y. (Osaka Prefecture University, Japan)**

| A-5 | Designing Methods for Linear Induction Motors for Maglev Vehicles Uehara, T., Nishimoto, T., Tokai University, Japan |
| A-6 | Magnetic Levitation Technology I (Oral) **Dr. Hull, J. R. (Argonne National Laboratory, USA)** **Dr. Azukizawa, T. (Toshiba Corporation, Japan)** |
| B-1 | 3 Degrees of Freedom Semi-Zero-Power Maglev Scheme for Two-Dimensional Linear Motor Liu, J., Koseki, T., The University of Tokyo, Japan |
| B-2 | Design of Zero-Power Controllers for Magnetic Suspension System by a Transfer Function Approach Mizuno, T., Saitama University, Japan, Takemori, Y., Honda Motor Company, Ltd., Japan |
| B-3 | magnetically Levitated Space Elevator to Low Earth Orbit Hull, J. R., Mulcahy, T. M., Argonne National Laboratory, USA |
| B-4 | Design and Analysis of a Maglev Transportation System for Clean Room Applications Wang, P.-J., National Tsing Hua University, Taiwan, Wang, L.-Y., Nan-Yung Institute of Business and Technology, Taiwan |

**October 18 (Thu) 13:20-15:00** Linear and Surface Motor (Oral) **Prof. Rufer, A. (Ecole Polytechnique Federale de Lausanne, Switzerland)** **Dr. Watanabe, T. (FDK Corporation, Japan)**

| A-7 | A Linear Micromotor with X-Y Stepping Motion Komori, M., Tachihara, T., Kyushu Institute of Technology, Japan |

**October 18 (Thu) 15:10-17:10** Linear Induction Motor II (Poster) **Prof. Higuchi, T. (Nagasaki University, Japan)** **Prof. Sanada, M. (Osaka Prefecture University, Engineering, Japan)**

| P1-1 | End Effect Compensator based on New Concept for Linear Induction Motor Fuji, N., Sakamoto, Y., Kayasuga, T., Kyushu University, Japan |
| P1-2 | Location of Short Circuit in Linear Induction Motor with Several Taps Utsumi, T., Takahashi, T., Yamaguchi, I., Tokai University, Japan |
| P1-3 | Analysis of the Vertical Component of Airgap Magnetic Flux-Density of Single-sided LIM by Simplified Fourier Transform Method Nonaka, S., Kyushu Electric College, Japan |
| P1-4 | Primary Leakage Magnetomotive Force of an Induction Actuator Goncalves, J. S., University of Algarve, Portugal, Calado, M. R., Cabrita, C. P., University of Beira Interior, Portugal |
| P1-5 | The Design of Torus Induction Machine for the Analysis of Linear Induction Motor Yabuchi, M., Yabe, K., Torii, S., Musashi Institute of Technology, Japan |
| P1-6 | Design Study of Cylindrical Linear Induction Motor for Machine Tools Hirano, T., Matsui, T., Nihon University, Japan |
| P1-7 | Circular Inductor "Way" with Disc-Type Secondary: Experimental Equipment and Characterization D'Ovidio, G., Lancara, G., Villani, M., University of L'Aquila, Italy, Crisi, F., Navarra, A., Science and Technology Park of Abruzzo, Italy |
| P1-8 | Analysis of Different Models of Linear Induction Drives Martinez-Tormante, M., Alentia, J., Garcia Rico, A., Florez, J., Universidad de Navarra, Spain |
| P1-9 | Static and Kinetic Characteristics of Linear Oscillatory Actuator for Cryocooler Compressor Yatsuoka, S., Takizawa, K., Nara, K., Hagiwara, Y., Cryodevice Inc., Japan, Watada, M., Eibhara, D., Musashi Institute of Technology, Japan |

**October 18 (Thu) 15:10-17:10** Linear Synchronous Motor I (Poster) **Prof. Komori, M. (Kyushu Institute of Technology, Japan)** **Prof. Torii, S. (Musashi Institute of Technology, Japan)**

| P1-10 | A Novel Linear Synchronous Motor with Half-Wave Rectified Self Excitation Oyama, J., Higuchi, T., Abe, T., Tanaka, H., Yamada, E., Nagasaki University, Japan |
Japan

P1-11 Vertical Electromagnetic Force of a Superconducting LSM Vehicle Based on the Formulation in dq-axis
Sakamoto, T., Kyushu Institute of Technology, Japan

P1-12 Influence of Permanent Magnet Materials on Performance Characteristics of a Linear Synchronous Motor
Gieras, J. F., United Technologies Research Center, USA, Gieras, I. A., Beaumont Services Company, L.L.C., USA

P1-13 The Design of Positioning Control of Unitized Linear Synchronous Motor Considering the Robustness
Tsukada, M., Um, Y., Kano, Y., Tokyo University of Agriculture and Technology, Japan

P1-14 Vector Control of Air-core PMLSM with Halfback Array
Jang, S.-M., Chang, K.-W., Lee, S.-H., Jeong, S.-S., Chungnam National University, Korea

P1-15 Reduciton of Detent Force in a Permanent Magnet Linear Synchronous Motor
Jang, S.-M., Yoan, I.-K., Lee, S.-H., Jeong, S.-S., Chungnam National University, Korea

P1-16 Skew Effect of Core Type Permanent Magnet Linear Synchronous Motor With High Positioning Accuracy
Jung, S.-Y., Cho, S.-M., Jung, H.-K., Seoul National University, Korea, Chun, J.-S., Mirae Corporation, Korea

P1-17 Joint Experimental and FEM Validation of Design Criteria for Tubular Linear Motors
Marignetti, F., Scaranro, M., Universita di Cassino, Italy

P1-18 Experimental Investigation of Thrust of an X-Y LSM
Inui, S., Nadasu, M., Chira, Y., Nihon University, Japan

P1-19 Numerical Simulation of the Vehicle Dynamics of the Superconducting Maglev System Incorporating the LSM Data Interpolation Method
Earlyy, R., Oshadi, H., The University of Tokyo, Japan

P1-20 Position Feedback Control of Permanent Magnet Type Tubular Linear Synchronous Motor for Vertical Transportation
Marco, R., Koseki, T., The University of Tokyo, Japan

P1-21 The Efficiency of LSM for the Rope-less Elevator Considering Condition of LSM
Ohkubo, S., Watada, M., Torii, S., Ebihara, D., Musashi Institute of Technology, Japan

October 18 (Thu) 15:10-17:10 Magnetic Levitation Technology II (Poster)

P1-22 A Study of Lateral Motion Damping of Electromagnetic Levitation System without Guide Rails for Streetcars and Subways
Jifuku, Y., Yamaguchi, H., Kakinoki, T., Tono-oka, R., Nomiyama, T., Watanabe, F., Sojo University, Japan

P1-23 Levitation Control of Completely Passive 4-Pole Core Excited Solely by Armature Currents of a Linear Synchronous Motor
Koseki, T., Yamashita, K., Kohno, K., The University of Tokyo, Japan

P1-24 Magnetic Levitation and Guidance Control of Very Thin Steel Plates by Means of Gap Length Change Commands
Sano, H., Fujimoto, S., Nakagawa, T., Tokyo Denki University, Japan

P1-25 A Development of Bearingless Machine Adopts Disk Motor
Tomita, T., Oguri, K., Watada, M., Torii, S., Ebihara, D., Musashi Institute of Technology, Japan

P1-26 A Proposal of the Magnetic Levitation System with Two Desired Values to Suppress the Elastic Vibration of the Thin Steel Sheets
Uchimido, G., Torii, S., Musashi Institute of Technology, Japan

P1-27 Memory Effect in Dynamics of Rotor Suspended by HTP Magnetic Bearing under Revolution
Hikihara, T., Kyoto University, Japan

P1-28 Levitation Characteristics of the Experimental Device for the Sidewall Electrodynamic Suspension
Ohashi, S., Masai, H., Kansai University, Japan

October 19 (Fri) 9:00-11:00 Linear Motor and Actuator (Poster)

P2-1 Development of Cylindrical Linear DC Motor for High Thrust
Kim, D., University of Agriculture and Technology, Japan

P2-2 Reducing the Normal Force of a Slot Type Moving Magnet Linear Actuator
Wakiwaka, H., Norhisam, M., Kamiya, A., Shinshu University, Japan, Yajima, H., Yamaguchi, T., Fujinawa, N., Hosono, M., Takada, S., SME Corporation, Japan

P2-3 The Proposal of SIM Servo System of the Linear Motor for the Meat Nursing Machine
Odajima, K., Um, Y., Kano, Y., Tokyo University of Agriculture and Technology, Japan

P2-4 Design of a High Thrust Interior Permanent Magnet Linear Synchronous Motor and its Characteristics
Norhisam, M., Wakiwaka, H., Kamiya, A., Shinshu University, Japan, Yajima, H., Yamaguchi, T., Fujinawa, N., Hosono, M., Takada, S., SME Corporation, Japan

P2-5 Optimal Design of Electromagnetic Linear Actuator for Mass Flow Controller

P2-6 Thrust Characteristics of Small Sized Cylindrical Type Solenoid for Water Valve in Full Automatic Washing Machine
Yamamoto, Y., Ninri, M., Nagano National College of Technology, Japan

P2-7 Influence of Mover Support Structure on Linear Oscillatory Actuator for Cellular Phones
Wakiwaka, H., Kato, H., Yoshimura, W., Shinshu University, Japan, Ito, H., Fukuda, N., Matsushiro, K., Takahashi Taushin Kogyo Co., Ltd., Japan

P2-8 Efficiency Characteristics of a Linear Oscillatory Actuator Under Simulated Compressor Load
Utsuno, M., Takai, M., Yaegaishi, T., Mizuno, T., Shinshu University, Japan, Yamamoto, H., Shibuya, K., Matsushita Refrigeration Co., Ltd., Japan, Yamada, H., Doctors International Collaboration Institute, Japan

P2-9 Analysis and Development of a New XY Actuator Based on Orthogonal Coils
Flores Filho, A. F., Suzin, A. A., Federal University of Rio Grande do Sul, Brazil, Da Silveira, M. A., Lutheran University of Brazil, Brazil, Kano, Y., Tokyo University of Agriculture and Technology, Japan

P2-10 Improved Vibration Modelling of Reciprocating Air-Compressor
Rens, J., Clark, R. E., Howe, D., University of Sheffield, UK

P2-11 Analytical Study of Double-side PM type X-Y Linear Synchronous Motor
Fuji, N., Tanaka, S., Okinaga, K., Kyushu University, Japan

P2-12 Development of a Linear Motor for Compressors of Household Refrigerators
Park, K.-B., Hong, E.-P., Lee, H.-K., LG Electronics Inc., Korea

P2-13 A Long Stroke Surface Acoustic Wave Linear Motor
Takasaki, M., Ishigami, Y., Higuchi, T., The University of Tokyo, Japan, Kurosawa, K. M., Tokyo Institute of Technology, Japan

P2-14 Actuation of SAW Linear Motor Using Multiple Identical Transducers
Ishigami, Y., Takasaki, M., Higuchi, T., The University of Tokyo, Japan, Kurosawa, K. M., Tokyo Institute of Technology, Japan

P2-15 Core Motion Performance of "Seal Mechanism" with Three Degrees of Freedom
Furutani, K., Furutachi, M., Mohri, N., Toyota Technological Institute, Japan

October 19 (Fri) 9:00-11:00 Magnetic Field Analysis II (Poster)

P2-16 3-D Finite Element Analysis of a Linear Induction Motor with Two Armatures
Yamaguchi, T., Kawase, Y., Yoshida, M., Nagai, M., Gifu University, Japan, Saito, Y., Ohtachi, Y., Toyota Automatic Loom Works, Ltd., Japan

P2-17 Analytical Prediction of Fringing Effect in Tubular Permanent Magnet Machines
Wong, J., Howe, D., Jesewell, G. W., University of Sheffield, UK

P2-18 An Establishment of the Wavelet Analysis of a Linear Induction Motor Aim at Analyzing the End Effect
October 19 (Fri) 9:00-11:00  Transportation and Conveyance I (Poster)
Prof. Sakamoto, T. (Kyushu Institute of Technology, Japan)
Dr. Sasakawa, T. (Railway Technical Research Institute, Japan)

P2-19 Electromagnetic Analysis of an Eddy Current Loss in Superconducting Magnet for Maglev
Hasegawa, H., Muri, T., Sasaki, T., Railway Technical Research Institute, Japan

October 19 (Fri) 9:00-11:00  Transportation and Conveyance I (Poster)
Prof. Sakamoto, T. (Kyushu Institute of Technology, Japan)
Dr. Sasakawa, T. (Railway Technical Research Institute, Japan)

P2-20 Numerical Control Simulations of Hybrid Maglev Transportation Systems
Wang, P.-J., National Tsing Hua University, Taiwan, Wang, L.-Y., Nan-Yung Institute of Business and Technology, Taiwan

P2-21 Coordinate Control between Running Characteristics and Rinding Comforts of EMS-Magnetically Levitated Vehicle based on Genetic Algorithm
Kusagawa, S., Baba, J., Shuto, K., Masada, E., Science University of Tokyo, Japan

P2-22 Control of a Linear Drive Test Stand for the NBP Railway Carriage
Henke, M., Grotstollen, H., University of Paderborn, Germany

P2-23 Realization of Pitch Control on the Test Stand for NBP Wheel-on-Rail System
Yang, B., Henke, M., Grotstollen, H., University of Paderborn, Germany

P2-24 Analysis of Linear Induction Motor for Subway Automatic Door Engine
Jung, S.-Y., Jung, H.-K., Seoul National University, Korea, Chun, J.-S., Mirae Corporation, Korea

P2-25 Electro-Hydrostatic and Electro-Mechanical Linear Actuators for Aircraft Flight Control Surfaces
Chum, P. M., Schofield, N., Powell, D. J., Alalafah, K., Bingham, C. M., Howe, D., University of Sheffield, UK

P2-26 Design of a Linear Homopolar Motor for a Magnetic Levitating Transportation Vehicle
Brakensiek, D., Henneberger, G., Aachen Institute of Technology, Germany

P2-27 Linear Motor Suitable for High Frequency Drive and its Application

P2-28 Proposed Configuration of the Repulsive Type Thermodynamic Line Magnetic Levitation System Using Permanent Magnets
Ohji, T., Toyama University, Japan, Azuma, T., Yamada, S., Iwahara, M., Kanazawa University, Japan, Takata, Y., Rigaku Co., Ltd., Japan

October 19 (Fri) 9:00-11:00  Other Related Topics (Poster)
Prof. Ohashi, S. (Kansai University, Japan)

P2-29 Analysis and Design of Permanent Magnet Linear Generator for Charging the Battery of Mobile Apparatus Considering Effect of Armature Reaction
Jung, S.-Y., Choi, H.-Y., Jung, H.-K., Seoul National University, Korea

P2-30 Electromagnetic Measurement on Normal and Singular Joint Gaps in the Railways
Mizuno, T., Mochizuki, D., Kawasaki, S., Kondo, T., Shinshu University, Japan, Watanabe, S., Nagano National College of Technology, Japan, Enoki, S., Nagayasu, Y., Shinko Sensor Technology Inc., Japan, Yamada, H., Doctors International Collaboration Institute, Japan

P2-31 Design and Dynamic Analysis of Linear Moving-Magnet Actuators
Clark, R. E., Jewell, G. W., Howe, D., University of Sheffield, UK

P2-32 Activities of the IECE Investigation Committee for Review of Technical Terminology for Linear Drive Systems and Related Topics
Ohaki, H., The University of Tokyo, Japan, Wakiwaka, H., Shintou University, Japan, Shinzen, K., Meidensha Corp., Japan

October 19 (Fri) 12:30-15:10  Transportation and Conveyance II (Oral)
Prof. Henneberger, G. (Aachen Institute of Technology, Germany)
Mr. Kitano, J. (Central Japan Railway Company, Japan)

A-10 Urban Maglev Technology Development in the USA
Gurol, S., Baid, B., Kim, I.-K., General Atomics, USA

A-11 Propulsion System for the Magnetic Railway Line: Shanghai Pudong Airport - Long Yang Road Station
Nothart, J., Henning, U., Siemens Transportation Systems, Germany

A-12 Operation Control System for the Magnetic Railway Line Pudong Airport - Long Yang Road Station Plaza
B., Hamann, P., Siemens Transportation Systems, Germany

A-13 Dynamic Characteristics of a Maglev Bogie Driven by One Side of the Both Sides LSM Yamanaka, A., Kitano, J., Central Japan Railway Company, Japan, Ohashi, S., Kansai University, Japan

A-14 High Thrust Permanent Magnet Excited Linear Synchronous Drive for Mass Acceleration Sena, S. O., Meins, J., Deeg, C., Mosebach, H., Technical University of Braunschweig, Germany

A-15 Evaluation of Air Suspended LIM Driven Transit System and Next Generation PRT
Shindo, R., Nippon Otis Elevator Company, Ltd., Japan, Mizuma, T., National Traffic Safety and Environment Laboratory, Japan, Deguchi, A., Kyushu University, Japan

A-16 Electromagnetic Non-contact Guide System for Elevator Cars
Morshiba, M., Akashi, M., Toshiba Corporation, Japan

October 19 (Fri) 12:30-15:10  Linear Synchronous Motor II (Oral)
Prof. Profumo, F. (Politecnico di Torino, Italy)
Prof. Maki, N. (Tokai University, Japan)

B-10 PM Linear Synchronous Motor with a Very High Thrust/Normal Force Ratio Profumo, F., Tencani, A., Gianolio, G., Agliotti, A., Politecnico di Torino, Italy

B-11 Theoretical Modeling and Operational Analysis of a Disc-type Permanent Magnet Linear Synchronous Machine Liu, C.-T., Chuang, K.-C., National Sun Yat-Sen University, Taiwan

B-12 Characteristic Analysis of PMLSM with Halbach Array for Short-Stoke Actuator
Jang, S.-M., Lee, S.-H., Yoon, I.-K., Chongnam National University, Korea, Lee, J.-H., Chungbuk University Drive and its Application

B-13 High Thrust Double-Sided Permanent Magnet Excited Linear Synchronous Machine with Shifted Stators
Canders, W.-R., Laube, F., Mosebach, H., Technical University of Braunschweig, Germany

B-14 Minimization of Cogging Force in Flat Permanent Magnet Linear Motors
Atencia, J., Martinez, G., Garcia Rico, A., Flores, J., Universidad de Navarra, Spain

B-15 Static and Dynamic Characteristics of Slotless Permanent Magnet Linear Synchronous Motor Energized by Partially Excited Primary Current Considering End-Effect
Jung, S.-Y., Jung, H.-K., Seoul National University, Korea, Chun, J.-S., Mirae Corporation

B-16 Thrust Ripple Improvement of Linear Synchronous Reactance Motor with Segmented Mover Construction
Sanada, M., Morimoto, S., Takeda, Y., Osaka Prefecture University, Japan

October 19 (Fri) 15:20-16:50  Organized Session (Oral)
Linear Drives for Industry Applications
Prof. Eastham, J. F. (EnigmaTEC Ltd.)
Prof. Ebihara, D. (Musashi Institute of Technology, Japan, Organizer)

A-17 Status of Permanent Magnet Linear Motors in the United States
Giers, J. F., United Technologies Research Center, USA, Godkin, M., BEI Technologies, Inc.

A-18 Present Status of Linear Drives for Industry Applications in Japan
Kanat, M., Shinko Electric Company, Ltd., Japan

A-19 Status of Linear Drive Technologies in Europe
Howe, D., Clark, R. E., Zhu, Z. Q., University of Sheffield, UK
October 19 (Fri) 15:20-16:50  Control (Oral)
Dr. Kim, I.-K. (General Atomics, USA)
Prof. Yamada, S. (Kanazawa University, Japan)

B-17  An MPC Application to the Linear RM Position Control System
Hirano, K., Um, Y., Kano, Y., Tokyo University of Agriculture and Technology, Japan

B-18  Motion Control of Linear Permanent Magnet Motors with Force Ripple Compensation
Roehrigr, Ch., University of Hagen, Germany, Jochheim, A., Hesse & Knipps GmbH, Germany

B-19  Quick VSS Control for Magnetic Levitation
Horen, Y., Kaplan, B.-Z., Ben-Gurion University of the Negev, Israel

B-20  Time-Optimal Control of Linear BLDCM under Physical Limitations
Kim, Y.-O., Choi, D.-S., Ha, I.-J., Seoul National University, Korea

October 19 (Fri) 17:00-17:30  Closing Remarks