The 18th International Conference on

Magnetically Levitated Systems and Linear Drives

MAGLEV'2004

PROGRAM BOOK

Hotel Inter-Continental, Shanghai, China

October 26~28, 2004

Organized by

Institute of Electrical Engineering, Chinese Academy of Sciences

National MAGLEV Transportation Engineering R&D Center

Aims of the Conference MAGLEV’2004

After MAGLEV'1995 in Germany, MAGLEV'1998 in Japan, MAGLEV'2000 in Brazil and MAGLEV'2002 in Switzerland, China and more particularly, Shanghai on the Yangtze River is proud to organize MAGLEV'2004, which will be held on October 25-28, by the Institute of Electrical Engineering, Chinese Academy of Sciences and National MAGLEV Transportation R & D Center.

The objectives of "MAGLEV'2004- The 18th International Conference on Magnetically Levitated Systems and Linear Drives" are to present and discuss the state of the art of the social, environmental, economical, scientific and technical aspects of high speed and urban passenger MAGLEV transportation systems and the latest developments on magnetic levitation, linear motors, as well as electromagnetic propulsion and industrial applications.

International Steering Committee

International Steering Committee Chairman

E. Masada

Department of Electrical Engineering, Faculty of Science & Technology, Tokyo Univ. of Science

Members

Brazil	R. Nicolsky	Italy	A. Morini
China	L. Yan	Japan	A. Seki
	X. Wu		M. Fujino
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	U. Henning		R. F. Post
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	M. Wackers		P. Wilkins
			S. Gurol

Conference Organizing Committee

Conference Chairmen

YAN Luguang
Institute of Electrical Engineering, Chinese Academy of Sciences
WU Xiangming
National MAGLEV Transportation Engineering R&D Center of China

Scientific Program Chairman

KONG Li
Institute of Electrical Engineering, Chinese Academy of Sciences
WANG Tianxiang
National MAGLEV Transportation Engineering R&D Center of China

Conference Logistic Chairmen

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Institute of Electrical Engineering Chinese Academy of Sciences
MO Fan
National MAGLEV Transportation Engineering R&D Center of China

Conference Scientific Committee

XU Shangang	Institute of Electrical Engineering, Chinese Academy of Sciences
LI Yaohua	Institute of Electrical Engineering, Chinese Academy of Sciences
LIN Guobin	National MAGLEV Transportation Engineering R&D Center of China
LIU Wanming	Southwest Jiatong University China
ZHANG Kunlun	Southwest Jiatong University China
SHE Longhua	National University of Defence Technology China
LONG Zhiqiang	National University of Defence Technology China
ZHOU Zhiyan	Shanghai General Municipal Engineering Design & Research Institute China
HUANG Jingyu	National MAGLEV Transportation Engineering R&D Center of China
LI Wenpei	National MAGLEV Transportation Engineering R&D Center of China
WANG Xiaoyong	National MAGLEV Transportation Engineering R&D Center of China
YE Yunyue	Zhejiang University China
XU Hongze	Northern Jiatong University China
WEI Rong	Institute of Electrical Engineering, Chinese Academy of Sciences

Secretariat Staff

WEI Rong	Institute of Electrical Engineering Chinese Academy of Sciences
GAO Jun	National MAGLEV Transportation Engineering R&D Center of China
YAN Jianping	Institute of Electrical Engineering, Chinese Academy of Sciences

Web-Site Manager

LAN Cuiling	Center for International Scientific Exchanges, Chinese Academy of Sciences

Scientific Information

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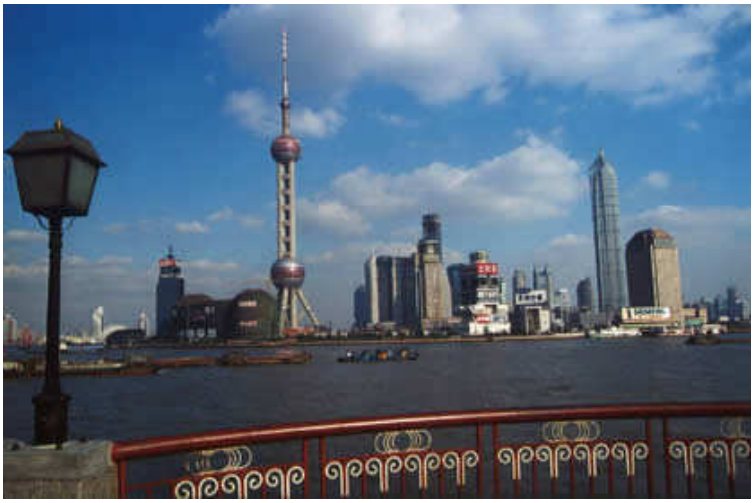
Tel : ++86-10-62616349
Fax: ++86-10-62560904
E-mail: maglev@mail.iee.ac.cn or weirong@263.net

Registration, hotel reservation and other information

Ms. Cuiling LAN
No. 52, Sanlihe Road, Beijing 100864 P. R. China
Tel : ++86-10-68597751
Fax: ++86-10-68597753
E-mail: cllan@cashq.ac.cn or cllan@yahoo.com

The City of Shanghai



Shanghai is China's most comprehensive industrial and commercial city.
Shanghai is known as the powerhouse of economic growth in China and a city full of enterprises and ambitions. Its fascinating history is reflected on the banks of the Huangpu River in architecture, culture and cosmopolitan ambience. As an international metropolis, Shanghai is ready to greet hundreds of thousands of guests from afar every day.

Time Zone

GMT + 8 hours, same as Singapore. The whole of China, including Hong Kong, is set to Beijing time.

Weather

Shanghai has a pleasant northern subtropical maritime monsoon climate. September and October are the most pleasant months to visit. October is cooling and mild. The monthly average temperature and precipitation of October is about 20□ and 153mm.

Currency and Credit Cards

The currency in China is Renminbi(RMB). Credit cards and US dollars are widely accepted in hotels and major shops. Money exchange is available at the Airport.
(1 USD is approx. 8.3 RMB and 1 EURO is approx. 10 RMB)

Voltage

The electricity supply in China is 220 V AC (50 Hz).
Most luxury hotels have built-in converters in bathrooms for shavers and hair dryers.

Mobile Phones

Network accepted in Shanghai is GSM900 and GSM1800

Emergency Call Numbers

Police	110
Fire Services	119
Ambulance	120

Shopping and Business Hours

Shops are usually open from 10.00 a.m. to 10.00 p.m. everyday.

Banks and Government Offices

Banks and Government offices are open from 9.00 a.m. to 6.00 p.m. from Mondays to Fridays only.

Conference Information

Conference Venue

Maglev'2004 will be held in the

Inter-Continental Pudong Shanghai

777 Zhangyang Road
Pudong, Shanghai 200120
People's Republic of China

Tel: +86 21 5835 6666
Fax: +86 21 5835 7777
E-mail: pudong@interconti.com

Hotel Inter-Continental Pudong Shanghai is one of the most well established five-star hotels in Shanghai. It is conveniently located in the heart of the Lujiazui, Shanghai's new financial and business district.

The hotel features 400 spacious and elegantly decorated rooms, six dedicated Club InterContinental floors, eight non-smoking floors and a range of 78 Suites, which offer a comfortable and relaxing environment. All guest rooms are equipped with broadband Internet access and voice mail to provide an efficient accommodation for business travelers. Wireless Internet is available in all restaurants, lounge and conference areas.

Transportation

Metro

Hotel Inter-Continental Pudong Shanghai is very near from the metro substation, within walk distance of the Dong Fang Road metro substation of Line 2.

Taxis

Taxis are always available at both Airports.
Taxis charges 10 RMB as base fee and 2 RMB per more km.
Taxi fares to the hotel will be about RMB120 (or about US$15~20).

Distance from Hongqiao International Airport: 24 km and 30 minutes drive
Distance from Pudong International Airport: 40 km and 40 minutes drive

Below is for the hotel's Chinese address and telephone number. You may print it and show to the local taxi driver, which is very useful to get to the hotel successfully!

Please take me to the InterContinental, thanks!
请送我到新亚汤臣洲际大酒店，谢谢！
（地址：浦东新区张扬路777号）

Please take me to the Tong Mao Hotel, thanks!
请送我到通茂酒店，谢谢！
（地址：浦东新区松林路 357 号）

Please take me to the Baosteel Hotel, thanks!
请送我到宝钢大厦酒店，谢谢！
（地址：浦东新区浦电路 370 号）

Meals

The breakfasts are provided in the hotel which you stay in.
The lunches (October 26~28), coffee break, the reception in the evening of October 26 and the banquet in the evening of October 27 are covered by your registration fee.

Language

The working language of the conference is English, which will be used for all printed material, presentation and discussion.

MAGLEV'2004

Time Table

The 18th International Conference on

Magnetically Levitated Systems and Linear Drives

InterContinental, Shanghai, China, October 26~28, 2004
Organized by IEECAS and NMTC

	Monday October 25, 2004 Registration (All Day)	
Night	**18:30~20:30**	**Meeting of the International Steering Committee**

	Tuesday October 26, 2004 Registration (All Day)	
AM	**8:00~8:30**	**Opening Ceremony**
	8:30~9:00	**PS1: Invited Paper: YAN Luguang p1-1**
	9:00~9:30	**PS1: Invited Paper: Eisuke MASADA p1-3**
	9:30~10:00	**PS1: Plenary Session p1-5**
	10:00~10:20	**Coffee Break**
	10:20~12:30	**Ride on Shanghai High Speed MAGLEV**
Noon	**12:30~14:00**	**Lunch**
PM	**14:00~14:30**	**PS2: Invited Paper：WU Xiangming p1-2**
	14:30~15:30	**PS2: Plenary Session2 p1-6 p1-7**
	15:30~16:00	**Coffee Break**
	16:00~18:00	**PS3: Plenary Session3** **p1-8 ~ p1-11**
Night	**18:30~21:30**	**Reception**

Legend：

: Tomson Grand Ballroom 2F

pt~n: t: topic
n: number

Wednesday October 27, 2004 Registration (All Day)				
AM	8:00~9:30	PS4: Plenary Session4 p1-12 p2-1 p1-13		
	9:30~9:50	Coffee Break		
	9:50~12:10	LS1a p5-1 ~ p5-7	LS1b p1-14 ~ p1-20	LS1c p1-21 ~ p1-27
Noon	12:10~13:40	Lunch		
PM	13:40~15:40	LS2a p5-8 ~ p5-13	LS2b p7-1 ~ p7-6	LS2c p3-1 ~ p3-6
	15:40~16:00	Coffee Break		
	16:00~18:00	LS3a p5-14 ~ p5-20	LS3b p7-7 ~ p7-12	LS3c p3-7 ~ p3-12
Night	18:30~20:30	Banquet		

Legend:

: Tomson Grand Ballroom 2F

: InterContinental Hall V+Hall VI 3F

: InterContinental Halll III 3F

pt~n: t: topic
n: number

Thursday October 28, 2004 Registration (Morning)				
AM	8:00~9:40	LS4a p5-21 ~ p5-26	LS4b p7-13 ~ p7-17	LS4c p2-2 ~ p2-6
	9:40~10:00	Coffee Break		
	10:00~12:00	LS5a p8-1 ~ p8-5	LS5b p7-18 ~ p7-22	LS5c p4-1 ~ p4-5
Noon	12:00~13:30	Lunch		
PM	13:30~15:30	LS6a p8-6 ~ p8-11	LS6b p6-1 ~ p6-7	LS6c p9-1 ~ p9-4
	15:30~15:50	Coffee Break		
	15:50~17:30	LS7a p8-12 ~ p8-16	LS7b p6-8 ~ p6-12	LS7c p10-1 ~ p10-4
	17:30~18:00	Closing Ceremony		
Night				

Legend:

: Tomson Grand Ballroom 2F
: InterContinental Hall V+Hall VI 3F
: InterContinental Halll III 3F

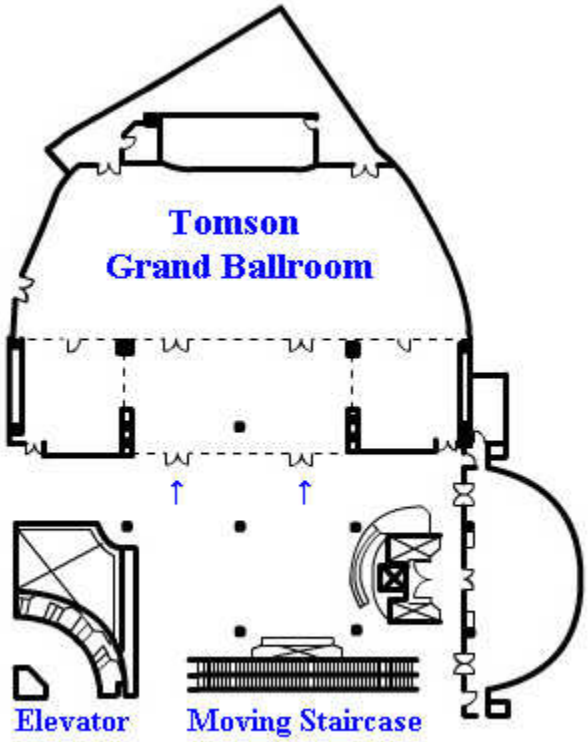
pt~n: **t: topic**
n: number

Total:

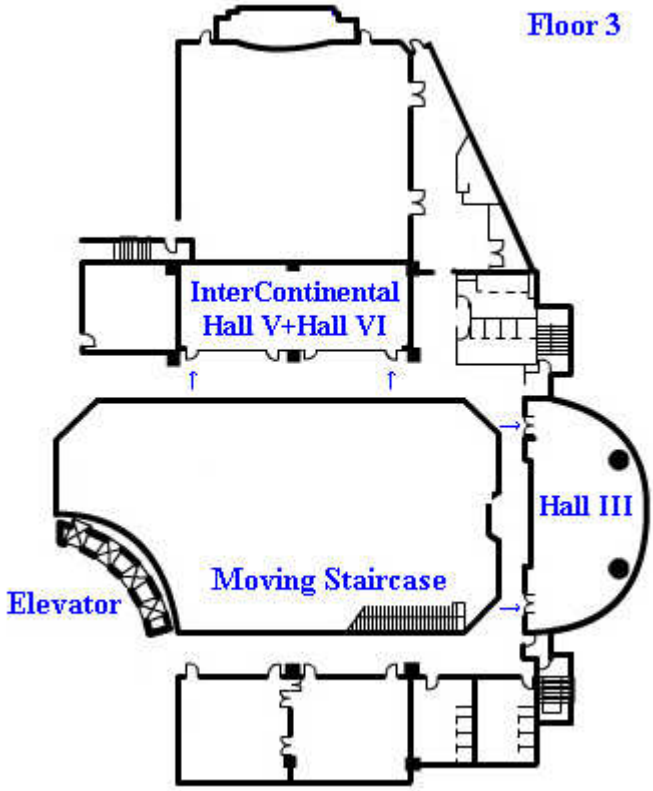
13 Plenary Session Papers
121 Lecture Session Papers

Conference Halls Layout

Floor 2



Floor 3



Sessions

Plenary Session 1	**Topic1 High Speed MAGLEV Developments and Projects**
Plenary Session 2	**Topic1 High Speed MAGLEV Developments and Projects**
Plenary Session 3	**Topic1 High Speed MAGLEV Developments and Projects**
Plenary Session 4	**Topic1 High Speed MAGLEV Developments and Projects**
Plenary Session 4	**Topic2 Urban MAGLEV Developments and Projects**
Lecture Session 1a	Topic5 Vehicle, Guideway and Infrastructure
Lecture Session 1b	Topic1 High Speed MAGLEV Developments and Projects
Lecture Session 1c	Topic1 High Speed MAGLEV Developments and Projects
Lecture Session 2a	Topic5 Vehicle, Guideway and Infrastructure
Lecture Session 2b	Topic7 Propulsion and Linear Motors
Lecture Session 2c	Topic3 New Ideas
Lecture Session 3a	Topic5 Vehicle, Guideway and Infrastructure
Lecture Session 3b	Topic7 Propulsion and Linear Motors
Lecture Session 3c	Topic3 New Ideas
Lecture Session 4a	Topic5 Vehicle, Guideway and Infrastructure
Lecture Session 4b	Topic7 Propulsion and Linear Motors
Lecture Session 4c	Topic2 Urban MAGLEV Developments and Projects
Lecture Session 5a	Topic8 Magnetic Levitation and Guidance
Lecture Session 5b	Topic7 Propulsion and Linear Motors
Lecture Session 5c	Topic4 Power Supply Strategy
Lecture Session 6a	Topic8 Magnetic Levitation and Guidance
Lecture Session 6b	Topic6 Safety, Operation Control and Maintenance
Lecture Session 6c	Topic9 On Board Energy Supply and Energy Transfer
Lecture Session 7a	Topic8 Magnetic Levitation and Guidance
Lecture Session 7b	Topic6 Safety, Operation Control and Maintenance
Lecture Session 7c	Topic10 Magnetic Bearings

Plenary Sessions

Morning October 26, 2004 Tuesday

8:00~8:30 Opening Ceremony

8:30~10:00

Plenary Session 1 Topic1 High Speed MAGLEV Developments and Projects

p1-1 Development of the Maglev Transportation in China
YAN Luguang
Institute of Electrical Engineering, Chinese Academy of Sciences, 100080 Beijing, China

p1-3 Maglev as a Key Technology of Transportation System in 21st Century
Eisuke MASADA
Faculty of Science & Technology, Tokyo Univ. of Science, Japan

p1-5 Further Development Program Transrapid of the Federal Ministry of Transport, Building and Housing
Wolfgang Dörries
Federal Ministry of Transport, Building and Housing
Viola Bienert
Dornier Consulting GmbH, Platz vor dem Neuen Tor 2, 10115 Berlin, Germany

10:20~12:30 Ride on Shanghai High Speed Maglev

Afternoon October 26, 2004 Tuesday

14:00~15:30

Plenary Session 2 Topic1 High Speed MAGLEV Developments and Projects

p1-2 Achievements of Shanghai Maglev Demonstration Operation Line and the Maglev Development Strategy
WU Xiangming
Shanghai Maglev Transportation Development Co., Ltd., Shanghai, China

p1-6 The Maglev System Transrapid – a Future-oriented Technology for Track-bound Transport Systems
Gerhard Wahl
Siemens Transportation Systems, Berlin, Germany

p1-7 Comparison of Maglev Project Planned for U.S. and Germany Using Transrapid Technology
Mark Yachmetz, John Harding, Arnold Kupferman
Railroad Development Office , Federal Railroad Administration, USA

16:00~18:00

Plenary Session 3 Topic1 High Speed MAGLEV Developments and Projects

p1-8 Transrapid: Innovative Traintechnology for Markets around the World
Hans-Jürgen Petersen
Transrapid International GmbH & Co. KG, Pascalstrasse 10F, 10587 Berlin, Germany

p1-9 The Status of the Running Tests of JR-Maglev
Shigeki MIYAMOTO, Yutaka OSADA
Central Japan Railway Company, 2-1-85, Konan, Minato-ku, Tokyo, Japan
Katsumi YAMAZUMI, Tsutomu FURUKI
Railway Technical Research Institute, 2-1-85, Konan, Minato-ku, Tokyo, Japan

p1-10 Future Prospects for Maglev Technology Applications
Donald M. Rote
Argonne National Laboratory, Argonne, Illinois, USA
Eddie Leung
Magtec Engineering, San Diego, California, USA

p1-11 The First HSST Maglev Commercial Train in Japan
Yoshihide Yasuda, Masaaki Fujino, Masao Tanaka
Chubu HSST Development Corporation, Japan
Syunzo Ishimoto
Aichi Kosoku Kotsu Corporation, Japan

Morning October 27, 2004 Wednesday

8:00~9:30

Plenary Session 4 Topic1 High Speed MAGLEV Developments and Projects & Topic2 Urban MAGLEV Developments and Projects

p1-12 Technical-economical System Comparison of High Speed Railway Systems
Michael Witt, Stefan Herzberg
Dornier Consulting GmbH, Platz vor dem Neuen Tor 2, 10115 Berlin, Germany

p2-1 Status of The General Atomics Low Speed Urban Maglev Technology Development Program
Sam Gurol, Robert Baldi, Daryl Bever
General Atomics, USA
Richard Post
Lawrence Livermore National Laboratory, USA

p1-13 Overview of the 2004 Magplane Design
D. Bruce Montgomery
Magplane Technology, Inc., USA

Lecture Sessions

Morning October 27, 2004 Wednesday

9:50~12:10

Lecture Session 1a Topic5 Vehicle, Guideway and Infrastructure

p5-1 Guideway Bearing Technology used in Shanghai Maglev Demonstration Line
WU Xiangming, LI Jinjun
National Maglev Transportation Engineering R & D Center, China
XU Bin
Shanghai Research Institute of Material, China

p5-2 Guideway Research for Shanghai Maglev Demonstration Line
WU Xiangming, HUANG Jingyu
National Maglev Transportation Engineering R & D Center, China

p5-3 The German Transrapid Guideway – Conclusions on the Guideway´s First Use in Shanghai
Jürgen Feix, Roman Brylka
CBP Consulting Engineers, Germany

p5-4 Guideway Monitoring during Operational Use on the First Transrapid Line in Shanghai
Willi Nieters
Industrieanlagen-Betriebsgesellschaft mbH, Germany

p5-5 Actual Developments in Guideway Constructions at the Example of the TRANSRAPID Munich Project
Eberhard GROSSERT
GP Dr. Grossert Planungsgesellschaft mbH, Germany
Markus KRETSCHMER
Bayerische Magnetbahnvorbereitungsgesellschaft mbH, Germany

p5-6 Interaction Vehicle / Guideway Guideway Design Aspects for the Munich Airport Link
Gert Schwindt, Ulrich Hauke
Transrapid International GmbH & Co. KG, Germany
Andreas Fried
Bayerischer Magnetbahnvorbereitungsgesellschaft mbH, Germany

p5-7 The Measurement and Analysis of the New-Type Guideway
Yukihisa Mine, Katsuhiro TAMURA, Satoru KATO
Central Japan Railway Company, Japan
Masao URABE
Railway Technology Research Institute, Japan

9:50~12:10

Lecture Session 1b Topic1 High Speed MAGLEV Developments and Projects

p1-14 The Transrapid Superspeed Maglev Technology – System Characteristics and Market Potential
Manfred Wackers, Robert Budel, lJochen Kruse
Transrapid International, Germany

p1-15 Status of the Superspeed Transrapid Maglev System – Technological Progress for Future Applications
Peter Strodt

ThyssenKrupp Transrapid GmbH, Germany

p1-16 Transrapid Project Shanghai

Dieter Hoffmann
Siemens AG, Germany

p1-17 The Transrapid Test Facility (TVE) -Experience for Startup and Commissioning of Shanghai Maglev

Jörg Metzner
Industrieanlagen-Betriebsgesellschaft mbH (IABG), Germany

p1-18 Field of Application for the Maglev System and its Requirements from the View Point of a Transport Company

Thomas Rühl, Gregor Huhn
Deutsche Bahn AG, Technology/Procurement, Germany

p1-19 Pennsylvania High Speed Maglev Project

Daniel R. Disk, Frank M. Clark
MAGLEV, Inc., USA

p1-20 California-Nevada Interstate Maglev Project

M. Neil Cummings
American Magline Group,USA
Bob Baldi
General Atomics,USA
Larry Blow
Transrapid International-USA
Jim Caviola
Parsons Corporation,USA
Hong Chin
Citigroup Global Markets Inc,USA
Wendall Hirschfeld
Hirschfeld Steel Co. Inc. ,USA
Richann Johnson
California-Nevada Super Speed Train Commission,USA
Gui Shearin
Parsons Corporation,USA

9:50~12:10

Lecture Session 1c Topic1 High Speed MAGLEV Developments and Projects

p1-21 The Transrapid Munich Airport Link – System Engineering and System Layout

Hans-Jürgen Petersen
Transrapid International GmbH & Co. KG, Pascalstrasse 10F, 10587 Berlin, Germany
Josef Ruppel
Bayerischer Magnetbahnvorbereitungsgesellschaft mbH, Germany

p1-22 Current Stage of Affairs of the Magnetic Levitation Project in Munich

Erwin Merkel, Josef Zeiselmair
BMG - Bavarian Magnetic Levitation Railway Preparatory Company Ltd., Germany

p1-23 Simulating the Proposed Munich Maglev System on the Transrapid Test Facility in Emsland

Hans-Peter Friedrich, Karl-Heinz Schulz
DB Magnetbahn GmbH, Germany

p1-24 Comparison of Train Resistances of TRANSRAPID and MLX01

Arnd STEPHAN

IFB Institut für Bahntechnik GmbH, Germany
Arkadij LASCHER
Technische Universität Dresden, Institut für Elektrische Verkehrssysteme, Germany

p1-25 Complex Method of Optimization Magnet Levitation Transport Systems and Determinations of Spheres of their Effective Applications

Arkadij LASCHER
Technische Universität Dresden, Institut für Elektrische Verkehrssysteme, Germany
Mark UMANOV
Faculty Railway and Railway Economy, Dnepropetrovsk National University of Railway Transport, Ukraune
Helen PRISHEDKO
Institute of the Transport Systems and Technologies of the National Academy of Sciences of Ukraine "Transmag", Ukraine

p1-26 Two Performance Parameters – When Acceleration Is More Important Than Speed in Modern Ground Transportation Systems

Charles Morris
Lockheed Martin, USA

p1-27 Future Maglevs in China and Beyond

Weiheng ZHU, Dao-Yi ZHU
Private,USA

Afternoon October 27, 2004 Wednesday

13:40~15:40

Lecture Session 2a Topic5 Vehicle, Guideway and Infrastructure

p5-8 Characteristics and Verification of the New Concrete Gliding Strip for Transrapid Guideway

Andreas Diekmann, Markus Bauer, Qinghua ZHENG
ThyssenKrupp Transrapid GmbH, Germany

p5-9 The Characteristics of the Levitation System of Linimo (HSST System)

Minoru MORITA, Mitsuru IWAYA, Masaaki FUJINO
Chubu HSST Development Corporation, Japan

p5-10 Vibration Analysis of Elastic-Rigid Coupling EMS Maglev System

SHI Xiaohong, LIU Hengkun, SHE Longhua, CHANG Wensen
National University of Defense Technology, Changsha, China

p5-11 Vibration Control of Maglev Vehicles Utilizing a Linear Generator

Ken WATANABE, Erimitsu SUZUKI, Hiroshi YOSHIOKA, Toshiaki MURAI, Takayuki KASHIWAGI, Minoru TANAKA
Maglev Systems Technology, Research and Development Division, Maglev Systems Development Department, Railway Technical Research Institute, Japan

p5-12 Environmental Planning for Munich's Transrapid Airport Link, in particular Noise and Vibration Protection

Wolfgang Herrmann
OBERMEYER Planen+Beraten GmbH, Germany
Michael Kordon
Bayerische Magnetbahnvorbereitungsgesellschaft, Germany

p5-13 Ride Comfort of Transrapid Vehicles in Shanghai

ZHENG Shubin

Southwest Jiaotong University, Chengdu, Sichuan, China
LIN Guobin, LIAO Zhiming, LI Te
National Maglev Transportation Engineering R&D Center, Shanghai, China

13:40~15:40

Lecture Session 2b Topic7 Propulsion and Linear Motors

p7-1 SWISSMETRO: Combined Propulsion with Levitation and Guidance
Alain Cassat
Swiss Federal Institute of Technology, Laboratory of Integrated Actuators, Lausanne, Switzerland
Christophe Espanet
University of Franche-Comté, France

p7-2 Development and Operation Results of Transrapid Propulsion System
U. Henning, D. Hoke, J. Nothhaft
Siemens AG, TS GT P, Germany

p7-3 Analysis and Optimize Methods for the Output Waveform of the High Power Converter in High Speed Maglev
MA Wenzhong, LI Yaohua, KONG Li, WEI Rong
Institute of Electrical Engineering, Chinese Academy of Sciences, 100080 Beijing, China

p7-4 New Long Stator Winding (LSW) Cable with Aero-Z Conductor for High Speed Up with Short Round-Trip Time
Harald Buethe, Francois Daugny, Holger Fastabend, Dirk Steinbrink, Peter Zamzow
Nexans Deutschland Industries GmbH & Co KG, Germany

p7-5 Transrapid Motor Winding with Optimized Grounding System
Markus Bauer, Jürgen Frantzheld, Qinghua ZHENG
ThyssenKrupp Transrapid GmbH, Germany

p7-6 Transrapid Motor Cable Mounting Technology
Xiufei LIU, Jürgen Braun
ThyssenKrupp Transrapid GmbH, Germany

13:40~15:40

Lecture Session 2c Topic3 New Ideas

p3-1 A Preliminary Investigation of an Electrodynamic Wheel for Simultaneously Creating Levitation and Propulsion
Jonathan Bird, T.A. Lipo
University of Wisconsin-Madison, USA

p3-2 Superconductively Levitated Transport System – the SupraTrans Project
O. de Haas, L. Schultz, P. Verges, C. Beyer
IFW Dresden, Leibniz-Institut für Festkörper- und Werkstoffforschung, Germany
S. Röhlig, H. Olsen
ELBAS GmbH, Germany
L. Kühn
HTW Dresden, Germany
D. Berger
Baumüller Kamenz GmbH, Germany
U. Noteboom
CIDEON engineering GmbH, Germany

p3-3 Design of the Guideway for the SupraTrans Project
Christoph Beyer, P. Verges, O. de Haas, L. Schultz

IFW Dresden - Institut fuer Metallische Werkstoffe, Germany

p3-4 Experimental Model Device with Bulk HTSC Ring and Iron-Homopolar Magnetic Guideway: Maglev Tests and Numerical Analyses

Gino D'Ovidio, Giovanni LANZARA
Transportation Department, University of L'Aquila, Italy
Francesco CRISI, Aurelio NAVARRA
Science and Technology Park of Abruzzo, Via Antica Arischia, Italy

p3-5 An Experimental Study on the Controllability of HTS Coils in MAGLEV Systems

XING Huawei, ZHOU Tong
Department of Automation, Tsinghua University, 100084 Beijing China
GU Chen, HAN Zhenghe, LIU Menglin, LIU Shuli
Applied Superconductivity Research Center, Tsinghua University, 100084 Beijing China

p3-6 Design, Construction and Performance of an EMS-based HTS Maglev Demonstrator

C. Gu, S. L. Liu, M. L. Liu, Z. Han
Applied Superconductivity Research Center,Tsinghua University, Beijing 100084, China
H. W. Xing, T. Zhou
Dept. Automation, Tsinghua University, Beijing 100084, China
W. S. Yin
Dept. Precision Instruments and Mechanology, Tsinghua University, Beijing 100084, China
J. Zong
Innova Superconductor Technology Co., Ltd. Beijing 100176, China

16:00~18:20

Lecture Session 3a Topic5 Vehicle, Guideway and Infrastructure

p5-14 Dynamic Responses of the Low-speed Maglev Vehicle on the Curved Guideway

ZHAO Chunfa
State Key Laboratory of Traction Power, Southwest Jiaotong Univ., Chengdu 610031, China
ZHAI Wanming, WANG Kaiyun
Train & Track Research Institute, Southwest Jiaotong University, Chengdu 610031, China

p5-15 Dynamic Simulation of the EMS Maglev Vehicle-Guideway-Controller Coupling System

ZHAI Wanming
National Power Traction Lab, Southwest Jiaotong University, Chengdu 610031, China
ZHAO Chunfa, CAI Chengbiao
Train & Track Research Institute, Southwest Jiaotong University, Chengdu 610031, China

p5-16 On the Calculation of Aerodynamic Characteristics of High-Speed Ground Vehicles on the Base of Three-Dimensional Navier-Stokes Equations

O.A. Prykhodko
Dniepropetrovsk National University, Ukraine
O.B. Polevoy, A.V. Mendriy
Institute of Transport Systems and Technologies of Ukrainian National Academy of Science, Ukraine

p5-17 Test Results on the New Vehicles of the JR-Maglev

Toshikatsu Nakanishi
Central Japan Railway Company, Japan
Hideyuki Takizawa, Kenichi Kato
Railway Technical Research Institute, Japan

p5-18 Investigations about the Sound Radiation Characteristic at Different Types of Girders

Hans-Gerd Runde
Industrieanlagen-Betriebsgesellschaft mbH (IABG), Germany

p5-19 Development of Active Noise Control System using Piezo Ceramic Loudspeakers

Katsuya Yamamoto, Naoto Tagawa, Yasuhiro Umehara

Railway Technical Research Institute, Japan
Isao Kakuhari, Ko Mizuno, Kenichi Terai
Matsushita Electric Industrial Co., Ltd, Japan,

p5-20 Noise Measurement on Shanghai Maglev Demonstration Line
Wang Fengming, He Dahai
National Maglev Transportation Engineering R & D Center, China
Jiang Weikang
State key lab of Vibration, Shock & Noise, Shanghai JiaoTong University, Shanghai, China
Wang Zhiqiang
Southwest Jiaotong University, Chengdu, Sichuan, China

16:00~18:00

Lecture Session 3b Topic7 Propulsion and Linear Motors

p7-7 Effect of the Permanent Magnet Location to Magnetic Forces in Maglev System with Hybrid Magnets
Yumei DU, Liming SHI, Nengqiang JIN
Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, China

p7-8 Propulsion Control of Air-Suspended Hybrid Linear Motor Vehicle Based on Decoupled Control in SLIM/LSM
K. Yoshida, H. Takami, T. Yoshida
Kyushu University, 6-10-1 Hakozaki Higashi-ku, Fukuoka 812-8581, Japan
M. Suganuma, K. Ohshima
Nippon Otis Elevator Co. Ltd, Japan

p7-9 Analytical Computation of the Electromotive Forces in Synchronous Linear Electrical Machines
F. Castelli Dezza, A. Di Gerlando, G. M. Foglia, R. Perini
Dipartimento di Elettrotecnica - Politecnico di Milano, Italy

p7-10 Analytical Evaluation of the Electromotive Forces in Synchronous Linear Electrical Machines
F. Castelli Dezza, A. Di Gerlando, G. M. Foglia, R. Perini
Dipartimento di Elettrotecnica - Politecnico di Milano, Italy

p7-11 The Independent Control of Thrust and Levitation Forces with a Third Order Harmonics Injection Method for TFLIM
Yuichiro Nozaki, Eisuke Masada
Department of Electrical Engineering, Faculty of Science & Technology, Tokyo Univ. of Science, Japan
Jumpei Baba
Graduate School of Frontier Sciences Department of Advanced Energy, The University of Tokyo, Japan

p7-12 Multipurpose Design Optimization of Linear Induction Motors for EMS Type Maglev Vehicles
Yuichiro Nozaki, Eisuke Masada
Department of Electrical Engineering, Faculty of Science & Technology, Tokyo Univ. of Science, Japan
Takafumi Koseki
Department of Communication and Information Science, School of Information Science and Technology, The University of Tokyo, Japan

16:00~18:00

Lecture Session 3c Topic3 New Ideas

p3-7 Potential of the Superspeed Transportation System Transrapid in Future Application,

Technical Innovations,Economic Feasibility
Luitpold Miller
ThyssenKrupp Transrapid GmbH, Germany

p3-8 Some more Schemes of Suspension in Potential Wells
Gorsky O.
Transmag Research Institute, Ukraine

p3-9 Basic Comparative Study on Magnetically Levitated Highways and Magnetically Levitated Railways Focused on Space Performance
Motoyuki MINAKAMI
Research Center for Advanced Information Technology,National Institute for Land & Infrastructure Management, Japan
Mike McDonald
Transportation Research Group,School of Civil Engineering and the Environment, University of Southampton, UK

p3-10 A Laminated Track for the Inductrack System: Theory and Experiment
James F. Hoburg
Carnegie Mellon University, USA
R. F. Post
Lawrence Livermore National Laboratory, USA

p3-11 MAS System Maglev
WEI Lehan
Institute of Shanghai Normal University, Shanghai, China

p3-12 The SemiMaglev UrbanautTM – A New Total Monorail Concept
Einar Svensson, John Svensson
The Urbanaut® Company, Inc., USA

Morning October 28, 2004 Thursday

8:00~10:00

Lecture Session 4a Topic5 Vehicle, Guideway and Infrastructure

p5-21 Field Measurement of Passing Pressure on High Speed Maglev Vehicles
WANG Fengming, HU Jie, SUN Yongfang
National Maglev Transportation Engineering R & D Center, China
LI Mingshui
China Aerodynamics R&D Center, Mianyang, Sichuan 621000,China

p5-22 Maglev Requirements for Tunnels
Andreas Werth
Obermeyer Planen + Beraten GmbH, Germany
M. Kretschmer
Bayerische Magnetbahnvorbereitungs-Gesellschaft mbH, Germany

p5-23 Line-fitting Skill on Shanghai High Speed Maglev Line
CAO Zhongming, BIAN Xiaochun
Shanghai Municipal Engineering Design Institute, China

p5-24 The Transrapid Guideway Switch – Test and Verifikation
Karl Fichtner, Franz X. Pichlmeier
ThyssenKrupp Transrapid GmbH, Germany

p5-25 Electromagnetic Environment Assessment for the Tobu-Kyuryo-Line (HSST System) in Japan
Jianqing WANG, Osamu FUJIWARA
Nagoya Institute of Technology, Japan
Syunzo ISHIMOTO
Aichi Kosoku Kotsu Corporation, Japan
Masaaki FUJINO
Chubu HSST Development Corporation, Japan
Takeshi MIZUMA
National Traffic Safety and Environment Laboratory, Japan

p5-26 Environmental Impact Assessment on the Tobu-Kyuryo-Line (HSST System) in Japan
Osamu FUJIWARA, Jianqing WANG
Nagoya Institute of Technology, Japan
Syunzo ISHIMOTO
Aichi Kosoku Kotsu Corporation, Japan
Masaaki FUJINO
Chubu HSST Development Corporation, Japan
Takeshi MIZUMA
National Traffic Safety and Environment Laboratory, Japan

8:00~9:40

Lecture Session 4b Topic7 Propulsion and Linear Motors

p7-13 Design of a Control Mechanism of a Maglev Carriage for Space Launch and Its Dynamic Stability
R. Kluka, W. Ko, Q. Han, C. Ham
Florida Space Institute, University of Central Florida, USA

p7-14 Development of the Ground Coil for Practical Use by the Combined Propulsion, Levitation

and Guidance System
Masayuki AIBA, Toshiaki MURAI, Masao SUZUKI, Noriyuki TAKAHASHI
Railway Technical Research Institute, Japan
Keizo YOSHIKAWA
Central Japan Railway Company, Japan

p7-15 Development of a Superconducting Magnet for Simplified Ground Coils
Masuru IWAMATSU, Toshiki HERAI, Tetsuro ASAHARA, Hiroshi SEINO, Toshiaki MURAI, Hitoshi HASEGAWA, Masafumi OGATA
Railway Technical Research Institute, Japan

p7-16 Airport Baggage Handling System using U Asynchronous Linear Motors
Gerard Coquery
INRETS LTN 2, avenue du Général Malleret-Joinville, 94 114 Arcueil, France
J.Sebillaud
FABRICOM AIRPORT SYSTEMS 7 allée de la Seine, 94203 Ivry sur Seine, France

p7-17 Magnetic Field and Thrust of Hybrid excitation Linear Synchronous Motor
YE Yunyue, LU Qinfen, FAN Chengzhi
College of Electrical Engineering, Zhejiang University,Hangzhou, China

8:00~9:40

Lecture Session 4c Topic2 Urban MAGLEV Developments and Projects

p2-2 Linear Synchronous Motor Control for an Urban Maglev
David W. Doll, Robert Kratz, Michael J. Newman
General Atomics, 3550 General Atomics Court, San Diego, CA 92186, USA
Allan B. Plunkett
AC Drives Technology, USA
Robert D. Blevins
Consultant, USA

p2-3 Urban Maglev Integrated Guideway Girder Module
Mandyam Venkatesh, Philip L. Jeter
General Atomics, USA

p2-4 Air Suspended and LIM Propulsion Transport System for goods: TALPINO introduced by WALUSO e.V
Falko DUCIA
WALUSO e.V., Austria
Alan FOSTER
Force Engineering Ltd., England
Hartwig MICHELS
DELU Deutsche Luftgleitkissen systeme GmbH, Germany
Michael PRACHENSKY
WALUSO e.V., Austria
Georg WAGNER
ZT – Büro DI Dr. techn. G. Wagner, Austria

p2-5 The First Urban Maglev Transport Application in Japan
Syunzo ISHIMOTO, Masato KATO
Aichi Rapid Transit Co., Japan

p2-6 The Tobu Kyuryo Line (Popular Name：Linimo): A Magnetic Levitation System
Yoshio YUYAMA
Composition of Department of Construction Aichi Prefecture Government, Japan

10:20~12:00

Lecture Session 5a Topic8 Magnetic Levitation and Guidance

p8-1 Dynamics of a Vehicle with New Systems for Electrodynamics Levitation and Guidance
V. A. Dzenzersky, N.M. Khatchapuridze, N. A. Radchenko, A. A. Zevin
Institute of Transport Systems and Technology, Academy of Sciences of Ukraine, Ukraine

p8-2 Dynamics and Control Requirements for EMS Maglev Suspensions
Roger Goodall
Loughborough University, Department of Electronic and Electrical Engineering, UK

p8-3 Dynamic Modeling and Control of the Magplane Vehicle
Jiarong FANG, Alexey Radovinsky,
MIT Plasma Science and Fusion Center, USA
D. Bruce Montgomery
Magplane Technology, Inc., USA

p8-4 Comparison of Total Performances for High-Speed EMS-type Magnetically Levitated Railway Vehicle
Shinichi KUSAGAWA, Katsuhiko SHUTOH, Eisuke MASADA
Department of Electrical Engineering, Faculty of Science & Technology, Tokyo University of Science, Japan
Jumpei BABA
Department of Electrical Engineering, Faculty of Science & Technology, the University of Tokyo, Japan

p8-5 6 Degrees of Freedom Control through Three Electromagnets and Three Linear Induction Motors
Yusuke MAKINO, Lilit KOVUDHIKULRUNGSRI, Takafumi KOSEKI
Department of Electrical Engineering, School of Engineering, The University of Tokyo, Japan

10:00~12:00

Lecture Session 5b Topic7 Propulsion and Linear Motors

p7-18 The Finite Element Analysis of Magnetic Field of the Hybrid Excitation Linear Synchronous Motor with Permanent Magnet and Electric Excitation
HUANG Mingxing, YE Yunyue, CHEN Xuan
College of Electrical Engineering, Zhejiang University, Hangzhou, Zhejiang Province 310027, China

p7-19 Thrust Control of the Permanent Magnet Linear Synchronous Motor with Multi-Frequency Resonant Controllers
Jia ZENG, Ghislain REMY, Philippe DEGOBERT, Pierre-Jean BARRE
Laboratoire d'Electrotechnique et d'Electronique de Puissance de Lille (L2EP), ENSAM, France

p7-20 Analysis and Design of a Tubular Linear Permanent Magnet Servo Motor
LIU Yuanjiang, G. P. Widdowson, S.Y. Ho
ASM Assembly Automation Ltd, China Hong Kong

p7-21 Static Thrust of a Short Primary Linear Reluctance Motor with Simple Secondary Structure
Kokichi Ogawa
Dept. of Mechanical and Engineering, Oita University, Japan

p7-22 Design, Fabrication, DSP Implementation and Comparison of Simulated Performance of a Linear Induction Motor for P-I and H∞ Control Schemes
Bijoy K. Mukherjee, A.Sengupta, S. Maiti, M. Sengupta
Dept. of Electrical Engg., Bengal Engg. College (D.U.), India

10:00~11:40

Lecture Session 5c Topic4 Power Supply Strategy

p4-1 Safety Certification and Approval of the Propulsion and Power Supply System of the Transrapid Shanghai
Arnd STEPHAN
IFB Institut für Bahntechnik GmbH, Germany
Jürgen LIESKE
Siemens AG, TS LM TRA, Germany

p4-2 The Research on Power Test of Shanghai High-Speed Maglev Transportation
Liming SHI, Yinan YANG, Gang HU, Yaohua LI
National Maglev Transportation Engineering R&D Cente, 2520, Longyang Road, Shanghai, China

p4-3 Optimal Design of Filter System in Power Supply System of Maglev
ZHANG Ruihua, YAN Luguang, XU Shangang, SUN Guangsheng
Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, 100080, China

p4-4 The Calculation of the Characteristic and Non-Characteristic Harmonic Current of the Maglev System
ZHANG Ruihua, XU Shangang, YAN Luguang, XU Zhengguo
Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing, 100080, China

p4-5 The Novel Power Supply System in the Yamanashi Maglev Test Line
Jun-ichi KITANO, Jun ENOMOTO, Haruo IKEDA
Central Japan Railway Company, Japan
Hidenori SHIGEEDA, Hisana KUROBE
Railway Technical Research Institute, Japan

Afternoon October 28, 2004 Thursday

13:30~15:30

Lecture Session 6a Topic8 Magnetic Levitation and Guidance

p8-6 Influence of Eddy Current Induced in Steel Rails on Electromagnetic Force Characteristics of EMS Maglev Systems
Hiroyuki Ohsaki, Jian Du
The University of Tokyo, Japan

p8-7 Characteristics of SC Coil Configuration for EDS Maglev to Reduce Leakage Flux with Strengthened Magnetomotive Force
Toshiaki MURAI, Takashi SASAKAWA
Railway Technical Research Institute, Japan

p8-8 Electromagnetic Analysis of the Electro-Dynamic Suspension with the Two Dimensional Finite Element Method
Yuu IWATANI, Susumu TORII
Department of Electrical and Electronic Engineering, Musashi Institute of Technology, Japan

p8-9 The Design and Simulation of an Adaptive Maglev Control Algorithm Based on Oscillation Observation
LI Yungang, ZHANG Ding, CHENG Hu
Changsha Institute, Changsha, Hunan, 410073, China

p8-10 Examination of the Follow-up Control System of Two Desired Values to Suppress the

Elastic Vibration in a Thin Steel Plate
Yasuhiro Shimizu, Susumu TORII
Department of Electrical and Electronic Engineering,Musashi Institute of Technology, Japan

p8-11 A Superconducting Magnetic Levitation Train Prototype in Closed Loop Track
Richard M. Stephan, A.C.Ferreira, M.A.Cruz Moreira, M.A.P.Rosário, O.J.Machado, R.de Andrade Jr., M.A.Neves, L.G.B.Rolim, R.Nicolsky
UFRJ, LASUP (Laboratory of Applied Superconductivity), Brazil

13:10~15:30

Lecture Session 6b Topic6 Safety, Operation Control and Maintenance

p6-1 Safety Assessment & Approval System of Shanghai Maglev Demonstration Line and its Practice
WU Tao
Shanghai High-Speed Transrapid Project Construction Headquarters, China

p6-2 System Safety Verification of the Shanghai Maglev Line
Wolfgang Otto
TÜV InterTraffic GmbH, Germany

p6-3 The Transrapid Munich Airport Link – Operation, Safety and Approval
Christian Rausch, Thorsten Janssen
Transrapid International, Pascalstr. 10F, 10587 Berlin, Germany
Jürgen Kokot
Bayrische Magnetbahnvorbereitungsgesellschaft, Germany

p6-4 TR08 Maglev Electromagnetic Fields (EMF) and Radiation (EMR): Characteristics and Safety Standards
Aviva Brecher
Transportation Safety, Health and Environment, USDOT/RSPA Volpe Center, USA

p6-5 Fault Tolerant Control of Electromagnetic Levitation System
Ho-Kyung Sung, D.S. Kim, H.J. Cho, M.H. Yoo, B.S. Kim, J.M. Lee
Korea Institute of Machinery and materials, New Transport System Group, Korea

p6-6 Device for Determination of Spatial Position of Magnitolevitative Transport Vehicle
V. A. Dzenzersky. I. I. Sokolovskiy, S. V. Plaksin
Institute of Transport Systems and Technologies “Transmag” of the Ukrainian National Academy of Science, Ukraina

p6-7 Routing for the Pennsylvania Maglev System by a Genetic Algorithm
Yongyan CAO, Zongli LIN, Theo C. Giras
Center of Rail Safety-Critical Excellence, Department of Electrical and Computer Engineering, University of Virginia, USA
Daniel R. Disk
MAGLEV Inc., USA

13:30~15:30

Lecture Session 6c Topic9 On Board Energy Supply and Energy Transfer

p9-1 Calculation of Electromotive Force Induced by the Slot Harmonics and Parameters of the Linear Generator
LIU Huijuan, ZHANG Yihuang
School of Electrical Engineering, Beijing Jiaotong University, Beijing, China

p9-2 Design of New Contactless Power Supply System
WU Ying, YAN Luguang, XU Shangang, SUN Guangsheng

Institute of Electrical Engineering, CAS, No.6 Beiertiao Zhongguancun, Beijing, China

p9-3 Experimental Study on Pot Core Transformer for Contactless Power Supply

WU Ying, YAN Luguang, XU Shangang

Institute of Electrical Engineering, CAS, No.6 Beiertiao Zhongguancun, Beijing, China

p9-4 Dual-Phase DC-DC Converter for Fuel Cell Power Supply in Transportation

XU Haiping, QIAO Ermin, GUO Xin, WEN Xuhui, KONG Li

Institute of Electrical Engineering, Chinese Academy of Sciences, 100080 Beijing, China

15:50~17:30

Lecture Session 7a Topic8 Magnetic Levitation and Guidance

p8-12 The Levitation Control Simulation of Maglev Bogie Based on Virtual Prototyping Platform and Matlab

HONG Huajie, LI Jie, CHANG Wensen

National University of Defense Technology, Hunan, Changsha, 410073, China

p8-13 The Design of a Magnetic Levitation Controller Based on the Study of Coupling Vibration

HONG Huajie, LI Yungang

National University of Defense Technology, Hunan, Changsha, 410073, China

p8-14 Maglev System with Hybrid-excited Magnets and an Air-gap Length Control

XU Zhengguo, JIN Nengqiang, SHI Liming, XU Shaohui

Institute of Electrical Engineering, Chinese Academy of Sciences, China

p8-15 Levitation Control Scheme for the Hybrid Maglev System without Acceleration Sensor

XU Shaohui, XU Zhengguo, JIN Nengqiang, SHI Liming

Institute of Electrical Engineering, Chinese Academy of Sciences, China

p8-16 Electromagnetic Levitation Control of Contactless Linear Synchronous Drive for a Flexible Vertical Transportation

Toshiyuki NAKAI, Takafumi KOSEKI

Department of Electrical Engineering of The University of Tokyo, Japan

Daisuke TATEISHI

Mitsubishi Electric Corp., Japan

Yasuaki AOYAMA

Shin-etsu Chemical Corp., Japan

15:50~17:30

Lecture Session 7b Topic6 Safety, Operation Control and Maintenance

p6-8 The Discussion of The Long-distance Maglev Transportation Organization Mode

SONG Denan, TANG Wei

Shanghai Maglucky Engineering Consultation Co., Ltd, China

p6-9 The Transrapid Maglev Maintenance Process

Friedrich Löser, Chunguang XU, Edmund Haindl

ThyssenKrupp Transrapid GmbH, Germany

p6-10 The Application of MMS on Unscheduled Maintenance of Transrapid

WANG Xiaoyong, CUI Weiqi, RONG Lijun, HUANG Wenfeng

National Maglev Transportation Engineering R & D Center, China

p6-11 The MAGLEV Radio System – Features for Future Applications

Peter Egner, Juergen Dangelmeyr

TELEFUNKEN Radio Communication Systems, Germany

p6-12 Data Transfer and Exchange in Information Systems of Transrapid Shanghai

WANG Xiaoyong, CHEN Yijun

National Maglev Transportation Engineering R & D Center, China

15:50~17:10

Lecture Session 7c Topic10 Magnetic Bearings

p10-1 Rotordynamics of a Passive Magnet Bearing System
H. Ming CHEN, Thomas Walter, Scott Wheeler, Nga Lee
Foster-Miller Technologies, USA

p10-2 Controllability and Observability of 2 DOF Permanent Magnet Maglev System with Linear Control
CUI Tianshi, Oka Koichi
The Kochi University of Technology, Japan

p10-3 Research on a Novel Radial Magnetic Bearing
ZONG Ming, WANG Fengxiang, WANG Jiqiang, SUN Yidan
Shenyang University of Technology, Shenyang 110023, China

p10-4 Research on Permanent Magnet Biased Hybrid Magnetic Bearing
ZONG Ming, ZHANG Jing, WANG Fengxiang, SUN Yidan
Shenyang University of Technology, Shenyang 110023, China

17:30~18:00 Closing Ceremony