

CTI Symposium China

Automotive Transmissions, HEV and EV Drives

CTI中国论坛

汽车变速器、混合动力和电力驱动技术

25 – 27 September 2017, Shanghai | 2017年9月25–27日，上海

KEYNOTE SPEAKERS



Zhengnan HU
President,
GEELY Automobile Research Institute,
China



Lipeng ZHENG
Vice President and Project Director,
Great Wall Motor Transmission
Research Institute,
China



Pu JIN
President & CTO,
Techrules Automobile
R&D Co., Ltd,
China



Dr Shemin ZHANG
Director of Powertrain Development,
Dongfeng Motor Technical Center
China



Dr Harald Massmann
Head of Region Asia-Pacific,
Powertrain Technology,
ZF (China) Investment Co. Ltd,
China



Haruhisa Nakano
Vice President,
Jatco (Guangzhou) Automatic Transmission Ltd,
China



Michael Schöffmann
Head of Transmission Development,
Audi AG,
Germany



CHAIRMAN: Prof. Dr Ferit Küçükay

Managing Director,
Institute of Automotive Engineering,
Technical University of Braunschweig,
Germany

- ✚ More than 65 presentations
- ✚ About 50 exhibitors
- ✚ 570 international delegates

Presenting companies include:

Audi
Vorsprung durch Technik



CHANGAN



FAW

GEELY



Great Wall
Focus Dedication Specialization

HYUNDAI



CHAIRMAN'S WELCOME ADDRESS

In the past few years, Chinese automotive industry has undergone tremendous changes and a series of new trends have come up. Numerous Chinese IT companies are investing in the automotive industry and have established a number of new electric vehicle brands. Chinese traditional OEMs have also begun to take actions. Several new brands have been established, especially in the high-end SUV segment. This shows that the Chinese automotive industry has entered the next level. The OEMs in China are now more focusing on their own development, especially the drive systems. Many of them have already started mass production of their own DCTs and hybrid drivetrains. The accelerated local development and production in China will be the new trend in the next years.

Another aspect is the introduction of realistic fuel consumption cycles and emissions tests, such as WLTP and RDE, which will continue making the emission regulations more stringent. China, as the world's largest automotive market, is developing its own emission standards as well, known as the China 6 standard (including RDE), and an own test cycle ("China Cycle"). Due to the discussion on the discrepancy between drive cycle fuel consumption and real driving fuel consumption, the automotive industry and especially the propulsion developers are under considerable pressure. The efficiency improvement of New Energy Vehicles (NEV), like HEV and EV, is essential.

Thanks to the strong support by the central and local governments, the sales of NEV in China will continue to see strong growth this year. OEMs from China and around the world are increasing their research and development investments. A series of new products will enter the Chinese market this year. On the other hand, the government will reduce the subsidies for NEV each year with the first reduction of 20% in this year. This will inevitably improve the industry's long-term development. NEV manufacturers must accelerate the development of new technologies to make breakthroughs and reduce the production costs constantly. China is also the most important driver for e-mobility worldwide. Meanwhile, the quota, that at least 8% of production of OEMs must be electric and hybrid vehicles, will be introduced at earliest by 2018. The tighter emissions limits show that a wide use of electric cars will become reality in China.

Again this year, the CTI Symposium will cover all important innovations and progress in the field of transmissions, drive systems, components and development methods as well as market-specific requirements and global prospects. We will not only focus on a variety of new transmissions, hybrid and EV drives, but also on component-related topics, which help to optimise the complete drive system:

- Dedicated Hybrid Transmission (DHT) as well as NEV transmission and drive system concepts
- Market-specific constraints and impacts on drive system and transmission development
- New concepts of starting devices, drivetrain topologies, components as well as actuator, sensor and control units for transmissions and drive systems
- Powertrain integration, operating strategy and control algorithm
- Software development and strategy
- Development tools, manufacturing technologies, lightweight design

We are taking the large variety of above-mentioned topics into account: **67 presentations in 8 parallel sessions, a panel discussion** on the question "Transmission and drive systems developed and produced in China" accompanied by the Transmission-Expo, our "technology market for innovations at your fingertips" with **about 50 exhibitors**.

Together with the **Introductory Day for Newcomers** prior to the main programme, the 6th CTI Symposium in Shanghai is again an important forum for international transmission and drive experts to exchange opinions and experience and provides a valuable status update.

I am looking forward to your participation and to many useful discussions and ideas.

Best regards,



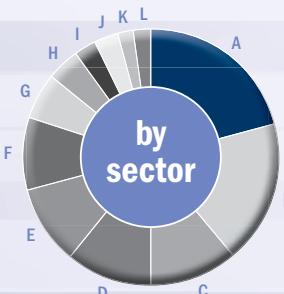
Ferit Küçükay

Prof. Dr Ferit Küçükay
Managing Director of the
Institute of Automotive Engineering,
Technical University of Braunschweig

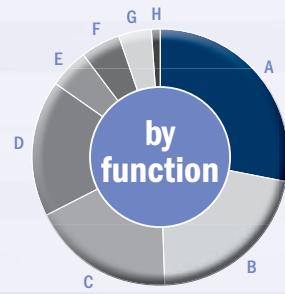
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PARTICIPANT STRUCTURE | 5TH CTI SYMPOSIUM CHINA (2016)

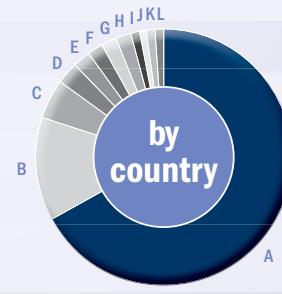
A	Automotive Suppliers (without Transmission Manufacturers)	21%
B	Transmission Manufacturers	18%
C	OEM	11%
D	Engineering/Development Service Providers	11%
E	Metal Processing	10%
F	Electric/Electronics	9%
G	Mineral Oil & Chemical Industry	6%
H	Mechanical Engineering	4%
I	Universities	3%
J	Press	3%
K	Others	2%
L	Plastic Industry	2%



A	Marketing/Sales	28%
B	Engineering/Design	21%
C	R&D/Transmission Dev./Powertrain	18%
D	General Management	17%
E	Business Development	5%
F	Press	5%
G	Project Management	4%
H	Others	2%



A	China	67%
B	Germany	13%
C	USA	5%
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E	Great Britain	2%
F	Austria	2%
G	France	2%
H	Belgium	2%
I	South Korea	1%
J	Italy	1%
K	Sweden	1%
L	Others	1%



BASICS AND PRACTICE OF AUTOMOTIVE TRANSMISSIONS, HYBRID & ELECTRIC DRIVES

Schedule: 9.00 a.m. – 5.00 p.m.



Objective

Newcomers and beginners will get an overview of the basics of conventional, hybrid and electric drives during the Introductory Day.

Based on road resistances and the characteristics of modern propulsion systems, the need for transmissions as torque and speed converting units will become obvious. In the session 'design layouts', different transmission concepts will be discussed.

The last session will be focusing on drive train management and the resulting challenges regarding drivability and efficiency.

About the instructors

The Introductory Day will be held by the Institute of Automotive Engineering (IAE), Technical University Braunschweig, Germany.

The IAE under the direction of Prof. Dr Ferit Küçükay has excellent experience in all relevant areas of automotive research and development.

It is the leading institute in Germany for automotive transmission development and research. With its close contact to the automotive and supplier industry, technical service providers, inspection authorities and public research institutions as well as national and international interdisciplinary working methods, it is highly experienced in solving complex problems and ensuring up-to-date seminars.

The IAE holds this Introductory Day regularly also as an integral part of the European CTI Symposium Berlin (Germany).

Content

Automotive drive concepts

- Drive characteristics and driving resistances, basics of longitudinal dynamics
- Background and function of starting devices, transmissions, hybrid and electric drives
- Design and function of
 - conventional drive concepts
 - serial, parallel and power-split hybrid drives
 - electric drives
- Market and development trends

Design layouts

- Starting devices – clutch, dual-mass flywheel, torque converter
- Transmission concepts (1):
 - Manual transmission (MT) – Two and multiple-shaft transmission for front-wheel and standard drive

Design layouts and drive train management

- Transmission concepts (2):
 - Automated manual transmission (AMT) – "add on" and integrated solutions
 - Dual-clutch transmission (DCT): in production application, introduced prototypes
 - Automatic transmission (AT): different gear set arrangements, examples of application
 - Continuously variable transmission (CVT): layout, chains and belts, driveability
 - Dedicated hybrid transmission (DHT): principles, applications and new concepts
- All-wheel drives

Drive train management

- Drive train management and operating strategy
- Control – shifting characteristics, applications
- Interfaces – engine, body, chassis

5.00 p.m. – 7.00 p.m.

PRE-CHECK-IN FOR MAIN DAYS

Get your conference documents and avoid waiting lines on the next day



16th International Congress and Expo

Pre-Announcement Flagship Conference



CTI Symposium Berlin

Automotive Transmissions, HEV and EV Drives

4 – 7 December 2017, Berlin, Germany

PLENARY SPEECHES

8.00 Reception and hand out of the conference documents
Opening of the Transmission Expo

8.30 – 8.35

Welcome address by CTI

8.35 – 8.50

Welcome address by the Chairman of the CTI Symposium



Prof. Dr Ferit Küçükay,
Managing Director, Institute of Automotive Engineering,
Technical University of Braunschweig, Germany

8.50 – 9.10

Roadmap of Geely G-Blue strategy



Zhengnan HU,
President, GEELY Automobile Research Institute, China

9.10 – 9.30

First 7-Speed DCT developed and produced in China



Lipeng ZHENG,
Vice President and Project Director,
Great Wall Motor Transmission Research Institute, China

9.30 – 9.50

Market needs for fuel-saving transmissions and hybrid technologies to cope with future regulations



Dr Harald Massmann,
Head of Region Asia-Pacific, Powertrain Technology, ZF (China) Investment Co. Ltd, China

9.50 – 10.10 Q & A

10.10 – 11.00 Coffee break and visit to the Transmission Expo

11.00 – 12.00 PANEL DISCUSSION

Transmission and drive systems developed and produced in China

MODERATOR:

Prof. Dr Ferit Küçükay, Technical University of Braunschweig, Germany

PANELISTS:

- **Zhengnan HU**, President, Geely Automobile Research Institute, China
- **Lipeng ZHENG**, Vice President and Project Director,
Great Wall Motor Transmission Research Institute, China
- **Dr Harald Massman**, Head of Region Asia-Pacific, Powertrain Technology,
ZF (China) Investment Co., Ltd, China
- **Michael Schöffmann**, Head of Transmission Development, Audi AG, Germany

12.00 – 13.30 Lunch break

Dedicated Hybrid Transmission (DHT)

13.30 – 13.55

Dedicated hybrid CVT

Zhe ZHANG,
Product Line Director,
Schaeffler Trading (Shanghai) Co. Ltd, China

14.00 – 14.25

Modular low-cost powertrain platform for HEV and EV

Erik Schneider,
Director Business Development,
IAV GmbH, Germany

14.30 – 14.55

AVL DynoShift II – low-cost modular powershifted transmission for complete electrification range

Vitaly Davydov,
Design Engineer Transmission,
AVL List GmbH, Austria

15.00 – 15.45

Coffee break and visit to the Transmission Expo

15.45 – 16.10

Cost efficient powertrain for plug-in hybrid electric vehicle

Bo BAO,
Advanced Electronics and Electrical Engineer,
Continental Automotive Holding, China

16.15 – 16.40

High-performance dedicated hybrid transmission for future plug-in hybrid drives

Erik Schneider,
Director Business Development,
IAV GmbH, Germany

16.45 – 17.10

AVL's future hybrid X-Mode, a modular transmission family concept

Ivan Andrasec, Senior Design Engineer,
Bernd Jeitler, Lead Engineer, Manager
Production & Cost Engineering/Industry 4.0,
AVL List GmbH

17.15 – 17.40

Analysis, design and implementation of MAGSPLIT® a novel dedicated hybrid transmission

Dr Stuart Calverley,
Chief Engineer,
Magnomatics Limited, UK

17.40 End of day one

17.40 – 18.30 Reception in the Transmission Expo

18.30 – 21.30

CTI Networking Night

Conventional Transmission and Drive System Concepts

13.30 – 13.55

The first application of small torque wet DCT in the world

Dr Jun YAN,

Transmission Design Chief Engineer, Dongfeng Motor Corporation Technology Center, China

14.00 – 14.25

MX65 – a new small modular manual transmission with best-in-class torque density

Dr Christof Schulte,

Senior Engineering Manager S M/T, Magna Powertrain, Germany

14.30 – 14.55

The new 5/6-speed manual transmission development and production for SAIC-GM

Quanren WANG,

Senior Architecture Design Manager of Transmission, PATAc of SAIC-GM, China

15.00 – 15.45

Coffee break and visit to the Transmission Expo

15.45 – 16.10

Changan shift by wire system for DCT applications

Saboor Mughal,

Technical Specialist Control Systems Design, Changan UK R&D Centre Ltd, UK

16.15 – 16.40

CO₂ potentials of DCTs – competition benchmark and technology outlook

Ulrich Frey,

Specialist Fuel Economy, Efficiency & Performance, GETRAG International, Magna Powertrain, Germany

16.45 – 17.10

Fuel economy contribution analysis of FR 4WD system with active transfer case

Dr Ilhun RYU,

General Manager, Hyundai WIA, South Korea

17.15 – 17.40

Pushbelt CVT integration in 48V system: when fun-to-drive meets reduced CO₂ footprint

Rokus van Iperen,

Section Manager Engineering, Bosch Transmission Technology BV, Netherlands

17.40

End of day one

17.40 – 18.30 Reception in the Transmission Expo

18.30 – 21.30

CTI Networking Night

Conventional Transmission and Drive System Components

13.30 – 13.55

The CVT pushbelt reinvented for future compact and efficient powertrains

Hui ZHANG,

General Manager, Bosch Trading (Shanghai) Co., Ltd, China

14.00 – 14.25

World's 1st production selectable one-way clutches for automatic transmissions

Carl Beiser,

Technical Business Manager, Means Industries, USA

14.30 – 14.55

Clutch-by-Wire, a technology for upcoming manual transmission systems

Jörg Buhl,

Manager Car Powertrain Technology, ZF Friedrichshafen AG, Germany

15.00 – 15.45

Coffee break and visit to the Transmission Expo

15.45 – 16.10

The slim synchroniser: save space – gain strength

Ottmar Back, Senior Vice President &

Head of Product Line Synchronizers, Hoerbiger Antriebstechnik Holding GmbH, Germany

16.15 – 16.40

Pendulum dampers for transmissions: Why should we review some preconceived ideas?

Jean-Riccel CHAN-HONG,

Technical Expert, Valeo Transmissions Nanjing, China

16.45 – 17.10

Clutch development challenge on recent drive train

Yasunori DOMAN,

General Manager, Nizamuddin JASMAN, Engineer, EXEDY Corporation, Japan

17.15 – 17.40

Specialty Polymers' Innovation in Automotive Powertrain

Yu PAN,

Sales Develop Manager, Solvay Group – Solvay (Shanghai) Co., Ltd, China

17.40

End of day one

17.40 – 18.30 Reception in the Transmission Expo

18.30 – 21.30

CTI Networking Night

Function Development, Testing, Calibration

13.30 – 13.55

Energy flow analysis for hybrid TGDI gasoline DCT vehicle

Dr Guangyong ZHENG,

Powertrain Development Expert, Powertrain R&D Institute, ChangAn Automobile Co. Ltd., China

14.00 – 14.25

Topology and shape optimal integration of a gearbox for electric vehicle aimed at minimising weight

Ki Bok LEE,

Researcher, Hyundai-Wia, South Korea

14.30 – 14.55

Virtual transmission development in the loop

Sven Menold, Expert SW System Design CVT, Bosch Engineering GmbH, Germany and

Sheng WANG, Project Manager, Bosch (China) Investment Ltd., China

15.00 – 15.45

Coffee break and visit to the Transmission Expo

15.45 – 16.10

Jatco Advanced benchmarking analysis tool J-BAT

Zejie ZHAN,

Development Engineer, Jatco (Guangzhou) Automatic Transmission Ltd, China

16.15 – 16.40

Continuous process for the validation of transmission controls

Dr Jan Nowack,

Department Manager, FEV Europe GmbH, Germany

16.45 – 17.10

Reliability design and experimental development for high-power electric driving wheel gearbox

Dr Lei ZHANG,

Deputy Chief Engineer, Beijing Institute of Space Launch Technology, China

17.15 – 17.40

Electro-mechanical system NVH simulation and validation for an integrated EV powertrain

Dr Leon Rodrigues,

HEV Drive Systems Engineer, Romax Technology Ltd.

17.40

End of day one

17.40 – 18.30 Reception in the Transmission Expo

18.30 – 21.30

CTI Networking Night

CTI Networking Night

26 September 2017,
Shanghai Marriott Hotel Parkview

Drink, dine and be entertained – all participants, speakers, exhibitors and sponsors are invited to the annual CTI Networking Night. Discuss the topics of the day in a relaxed atmosphere and make new contacts at the CTI Networking Night – a great opportunity to get together again!



**Perfect to intensify your
contacts to fellow specialists**

Relaxed atmosphere



PLENARY SPEECHES

8.00

Reception and opening of the Transmission Expo

8.30 - 8.40

Opening of the day by the Chairman of the CTI Symposium

Prof. Dr Ferit Küçükay

8.40 - 9.00

Modular development for eDrive system

Dr Shemin ZHANG,

Director of Powertrain Development, Dongfeng Motor Technical Center, China

9.00 - 9.20

The advantages and application outlook of turbine-recharging electric vehicle

Pu JIN,

President & CTO, Techrules Automobile R&D Co., Ltd

9.20 - 9.40

Energy supply for future vehicles and mobility

Michael Schöffmann,

Head of Transmission Development, Audi AG, Germany

9.40 - 10.00

Let us listen, think, and execute in China for Chinese automobile

Haruhisa Nakano,

Vice President, Jatco (Guangzhou) Automatic Transmission Ltd, China

10.00 - 10.20 Q&A

10.20 - 11.05 Coffee break and visit to the Transmission Expo

Sessions (see following details)

5.05 - 5.15 Change to plenum

Summary of the Symposium

Prof. Dr Ferit Küçükay

NEV Transmission and Drive System Concepts

11.05 - 11.30

A comprehensive system approach for future powertrain electrification

Dr Joerg Gindele,

Senior Director Core Technologies,
GETRAG, Magna Powertrain, Germany

11.35 - 12.00

"PHEVplus" efficiency-enhanced DHT for plug-in hybrid applications

Masashi Aikawa,

Programme Chief Engineer eDrive Asia,
GKN Driveline Japan Ltd., Japan

12.05 - 12.30

Integrated electric transaxle and electric rear drive module for passenger vehicles

Ping YU,

Chairman & CEO, Powetrain Chief Engineer,
Jing-Jin Electric Technologies, China

12.30 - 2.00

Lunch and visit to the Transmission Expo

2.00 - 2.25

A modular approach for high-performance xEV drives systemsDr Felizitas Heilmann, Head R&D,
Valeo Siemens e-Automotive, Germany

2.30 - 2.55

Solutions for modular hybridisation of FWD DCTsDr Gereon Hellenbroich,
Department Manager,
FEV Europe GmbH, Germany

2.55 - 3.40

Coffee break and visit to the Transmission Expo

3.40 - 4.05

HEV P2 module concepts for different transmission architecturesEckart Gold, Senior Manager, Advanced Engineering,
BorgWarner Transmission Systems, Germany;
Scott ZHANG, Engineering Director, BorgWarner, China

4.10 - 4.35

GKN 2-speed transmission technology for hybrid and electric vehicleQikai MIAO,
Technical Centre Director, GKN Driveline, China

4.40 - 5.05

Facing future - e-DCT hybrid dual clutch transmissionXiang XUE,
Technical Director/Project Director,
JF PowerTronic Technology Co., Ltd, China

NEV Transmission and Drive System Components

11.05 – 11.30

A modular upgrade path for hybridized manual transmissions

Dr Frank Casimir, Director, Product Segment Manual Transmissions GETRAG Ford Transmissions GmbH, Magna Powertrain, Germany

11.35 – 12.00

The new "Variable Spring Absorber" – an innovative torsion damping system for future powertrains

Alexander Moser, Supervisor Advanced Engineering, BorgWarner, Germany

12.05 – 12.30

Dual wet clutches for hybrid powertrains, challenges for packaging and fuel efficiency optimisation

Xuejun YING, R&D Director, TC&DCT, Valeo Automotive Transmissions Systems (Nanjiang), China

12.30 – 2.00

Lunch and visit to the Transmission Expo

2.00 – 2.25

48V – How it meets customer needs

Thomas Pels, Head of Hybrid and Electric Powertrain Systems, AVL Schrick GmbH, Germany

2.30 – 2.55

Mild hybrid transmission: the next step from stop & start to full hybrid solutions

Dr Oliver Nass, Group Sales & Marketing Director, Punch Powerglide, Belgium

2.55 – 3.40

Coffee break and visit to the Transmission Expo

3.40 – 4.05

Integrated electric drive system based on high speed switched reluctance motor

Dr Yu YANG, Business Development Partner, Punch Powertrain NV, Belgium

4.10 – 4.35

Advanced insulation systems for cost-effective high-power density e-motors

James Bonnett, Market Technology Manager, Victrex plc, UK

4.40 – 5.05

Efficiency improvement by latching clutches in different drive trains

Alexander Moser, Supervisor Advanced Engineering, BorgWarner, Germany

Transmission & Drive System Market, Development Requirements

11.05 – 11.30

Implementation of new energy vehicle and related policy in Shanghai

Zhengyu SUN, Researcher, Shanghai Academy of Development & Reform, China

11.35 – 12.00

Study on the correlation between automatic transmission and vehicle fuel consumption

Fangqing HUANG, Director APAC, Light Vehicle Powertrain Forecast, IHS Markit, China

12.05 – 12.30

Industry development and application of electric logistics vehicles in China

Xiaoyuan WU, Associate Professor, Tongji University, China

12.30 – 2.00

Lunch and visit to the Transmission Expo

2.00 – 2.25

Industrialisation of transmissions

Dietmar von Polenz, Interim Manager and Consultant, Interim [4]Automotive, Germany

2.30 – 2.55

High efficiency drive unit platform for electric vehicle

Dr Szabolcs Péteri, Technical Manager, Hofer Powertrain, Germany

2.55 – 3.40

Coffee break and visit to the Transmission Expo

3.40 – 4.05

Market structure and development prospect of new energy vehicles in China

Liangyu CHEN, Partner, Shanghai Timer Auto Consulting Co., China

4.10 – 4.35

Comprehensive e-mobility – what is feasible and what makes sense?

Dr Karsten Wasiluk, Assistant Director Automotive Transport, Schlegel und Partner, Germany

4.40 – 5.05

Low voltage hybridisation: How to lower costs, enhance CO₂ benefits and transmission impacts

Julien Sabrie, Asia System Engineering Director, Valeo Powertrain Business Group, China

Actuator, Sensor and Control Units in Drive System

11.05 – 11.30

The "smart actuator platform" as a modular system for energy efficient and dynamic actuators and pumps

Zhipeng WANG, Head of Engineering China, Continental AG, China

11.35 – 12.00

Trends in transmission speed sensors and their performance

Henry ZHANG, Marketing Manager, Infineon Technologies China Co, Ltd, China

12.05 – 12.30

Lightweight design in transmission by use of high-performance polymers, shown at the example of electrohydraulic and electromechanical park lock actuators

Christa TANG, Head of R&D, FTE Automobile (Taicang) Co., Ltd, China

12.30 – 2.00

Lunch and visit to the Transmission Expo

2.00 – 2.25

Standards and flexibility – domain specific languages as tools for better transmission solenoid tests

Dr Jens Möhring, Manager Automation & Electronics, Hilite Germany GmbH, Germany

2.30 – 2.55

Condition monitoring and real time control of transmission and drive systems

Johannes Giessibl, Senior Magnetoelastic Project Manager, Methode Electronics International GmbH, Germany

2.55 – 3.40

Coffee break and visit to the Transmission Expo

3.40 – 4.05

ASPICE – A feature based approach

Christof Schroll, Senior Manager, United Automotive Electronic Systems, China

4.10 – 4.35

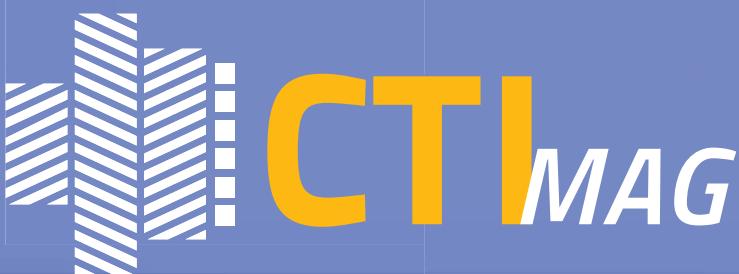
Actuation synthesis for new hybrid transmission application (DHT)

Kai Gläser, Team Manager Gear Set Layout & Computation, IAV GmbH, Germany

4.40 – 5.05

Simulation methods applied to a drive-up-bucking problem

Johannes Krebs, Simulation Engineer, Hilite Germany GmbH, Germany



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Driveline Department,
SAIC Motor Technical Center



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Vice Director of the Energy Transportation
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Development & Reform



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Director of Automotive Strategy
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Tsinghua University



Dr Robert Fischer,
Executive Vice President Engineering
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AVL List GmbH



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Beijing Institute of Technology



Prof. Huiyan CHEN,
Professor at the College of Mechanical and
Vehicle Engineering, Beijing Institute of Technology



Tim Gilbert,
Director, Product Development
Department, Dongfeng
GETRAG Transmission Co.,Ltd.



Noel R. Mack,
Executive Director Truck
Driveline Systems, AAM



Kaiguo LI,
Vice President,
China Automotive Engineering Research Institute



Prof. Dr Xin GUAN,
Dean of School of Automobile
Engineering, Jilin University



Haruhisa Nakano,
Vice President, Jatco (Guangzhou)
Automatic Transmission Ltd



Gerhard Henning,
Executive Chief Engineer, Automatic
Transmission Team, Great Wall Auto
Transmission Research Institute



Prof. Dr Peter Tenberge,
Director of the Institute for
Industrial and Automotive Drive Trains,

CTI Symposium World Series

- **2,500+ attendees in USA, China and Europe in 2016**
- **Representatives from 28+ countries**
- **230+ exhibiting companies**

YOUR CTI CONTACTS



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HAONENG HOERBIGER DriveTech (Shanghai) Co., Ltd. | www.haoneng-hoerbiger.com



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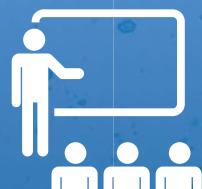


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