

General information

The Summer School is aimed at young researchers, who work in the field of automotive driveline design and at those who are interested in the development of efficient and smart drives for automotive applications of the future. In four sessions, lectures by leading professors set the scientific bases and show the challenges that we currently face. Thereafter, presentations by young researchers give a taste of the ongoing research activities and encourage scientific discussions among the audience. This is an ideal opportunity to enrich your knowledge, broaden your perspective, exchange ideas with fellow researchers and extend your network across borders in an exciting environment.

Scientific Committee

Prof. Dr.-Ing. Karsten Stahl (FZG, TUM)
Dr.-Ing. Thomas Lohner (FZG, TUM)
Prof. Dr. Gianpiero Mastinu (PoliMi)
Prof. Dr. Carlo Gorla (PoliMi)
Prof. Dr.-Ing. Georg Wachtmeister (LVK, TUM)
Prof. Dr.-Ing. Markus Lienkamp (FTM, TUM)
Prof. Dr. Daniel Rixen (AMM, TUM)
Prof. Dr. Carlo Bottasso (WIND, TUM)

Financial Support

We kindly acknowledge financial support from the Faculty Graduate Center of the Department of Mechanical Engineering at TUM.



Registration

This Summer School is primarily addressed at research associates and PhD-level students who work in the field of automotive driveline design or related areas. Participation is free of charge. It includes all lectures with course material, a visit of the BMW plant in Dingolfing, a certificate of participation and optionally a visit of the BMW plant in Munich.

Register now on the Summer School website or follow the QR-code

<http://www.fzg.mw.tum.de/SummerSchool2017>



The number of participants is limited, so please register early or at the latest until Sunday, 25th June 2017. Please note, the registration is binding.

Accommodation: A limited contingent of single rooms is reserved at the ibis budget Hotel close to the Summer School venue until 25th June 2017. Details can be found on the Summer School website.

Contact Details

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Technical
University
of Munich



SUMMER SCHOOL 2017

Efficient and Smart Drives for Automotive Applications



24th – 26th July 2017

Garching b. München, Germany

Organized by the Institute of Maschine Elements (FZG)
Prof. Dr.-Ing. Karsten Stahl



DAY 1

Mon, 24th July 2017

8:30 Registration

8:45 **Summer School Opening**
Prof. Dr.-Ing. Karsten Stahl (FZG, TUM)

Session 1: „Gear Transmission Efficiency“

9:00 Introduction lecture „Gear Transmission Efficiency“
Dr.-Ing. Thomas Lohner (FZG, TUM)

9:30 **5' Break**

9:35 Load-dependent Power Losses in Gear Transmissions
M.Sc. Constantin Paschold (FZG, TUM)

10:05 Load-independent Power Losses in Gear Transmissions
Dr. Franco Concli, PhD (Free University of Bozen)

10:35 **10' Break**

10:45 Friction Behavior of Thermoplastic Gears
M.Sc. Enzo Maier (FZG, TUM)

11:30 **Lunch Break at the Max-Planck-Institute**

12:30 Lab tour through the FZG

Session 2: „Driveline Efficiency“

14:00 Introduction lecture „Driveline Efficiency“
Prof. Dr. Carlo Gorla (PoliMi)

14:30 **5' Break**

14:35 High-speed Powertrain for Electric Vehicles
M.Sc. Martin Sedlmair (FZG, TUM)

15:05 **5' Break**

15:10 Optimization—All-Terrain (Motor-)Cycles
Ing. Kesavan Ramakrishnan (PoliMi)

16:00 **Snacks**

18:00 **Allianz Arena Tour**

20:00 **Dinner at the „Augustiner Klosterwirt“**

DAY 2

Tue, 25th July 2017

Session 3: „Smart Wheel Systems“

9:00 Introduction lecture „Wheel Systems“
Prof. Dr. Gianpiero Mastinu (PoliMi)

9:30 **5' Short Break**

9:35 In Wheel Motor (IWM) for Electric and Hybrid Vehicles
Prof. Dr. Gianpiero Mastinu (PoliMi)

10:00 Car Smart Wheel
Ing. Stefano Dell'Agostino (PoliMi)

10:30 **10' Short Break**

10:40 Motorcycle Smart Wheel
Dr. Lorenzo Comolli (PoliMi)

11:10 Friction Potential Evaluation
Dr. Giorgio Previati (PoliMi)

12:00 **Lunch Break at the Max-Planck-Institute**

Technical Visit

13:45 Bus leaves in Front of Mechanical Engineering Faculty

14:00 Technical visit of the **BMW Plant in Dingolfing**
with presentation on Gear Design
by *Dr.-Ing. Markus Klein*

17:30 Bus returns to TUM Campus in Garching

19:00 **Dinner at the „Garching Augustiner“**



Summer School Venue

The TUM Garching Campus is located about 20 km north of downtown Munich and close to the Munich Intl. Airport. You can reach us with public transportation or by car. Presentations will be held in a fully-equipped conference room at the Institute of Maschine Elements on the TUM Garching Campus.

DAY 3

Wed, 26th July 2017

Open Session 4

9:00 Status Electromobility 2017: or how Tesla will not win
Prof. Dr.-Ing. Markus Lienkamp (FTM, TUM)

9:30 **5' Short Break**

9:35 Fuels for future smart and efficient internal combustion engines – sustainable and clean solutions for automotive applications
Dr.-Ing. Martin Härtl (LVK, TUM)

10:05 Consistent Enhancements of a Dynamic Downsizing ICE for Passenger Cars - The Split-Crankshaft Engine
Dipl.-Ing. Sebastian Rösler (LVK, TUM)
Dipl.-Ing. Patrick Fischer (FZG, TUM)

10:35 **5' Short Break**

10:40 EHL Modelling of Textured Surfaces
p.p. *Prof. Dr. Daniel Rixen (AMM, TUM)*

11:15 **Summer School Closing**
Prof. Dr.-Ing. Karsten Stahl

13:00 PoliMi PhD candidates: Exam (Room MW2501)

14:30 *Optional:* Leave for visit of the visit of the car production at the **BMW Plant in Munich** (approx. 2.5h)

How to find us

By car: Motorway A9, take the exit 'Garching-Nord' and drive straight ahead to the Research Centre. Use the large parking area at Boltzmannstr. 15.

From Munich airport: Take the S-Bahn S1 to 'Neufahrn' and then the bus no. 690 towards 'Technische Universität München' (approx. 50 Minutes).

