

Place of Workshop

Attention – The place of workshop has changed

Studentenwerk Dresden
Hochwaldstraße 12
02763 Zittau

12 Zittau/Görlitz University Library, Mensa, Studentenwerk
Building Z X, seminar room in the basement



Secretary's office

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Organizer

Zittau/Görlitz University of Applied Sciences
Institute of Process Technology, Process Automation and
Measuring Technology (IPM)

Program committee

Dipl.-Ing. Gunther Budig EAAT GmbH Chemnitz
Prof. Ralf Werner Chemnitz University, EWA
Prof. Frank Worlitz Zittau/Görlitz University of Applied
Sciences, IPM

Registration

The workshop office will be open on
02.09.2019 - 11:00 am to 1:00 pm and
03.09.2019 - 08:00 am to 09:00 am

Conference fee

The conference fee of 135 € must be paid cashless. Please
transfer the fee until August 9th, 2019 to

Payee: Hauptkasse des Freistaates Sachsen
Bank: Deutsche Bundesbank
IBAN: DE06 8600 0000 0086 0015 19
BIC: MARK DEF1 860

and indicate the following intended use:

1. 07040 / 00603-0
2. 71006002 + name of the participant

The conference fee is VAT-exempt according to § 4 no. 22
letter a of the German law UStG.
If you need an invoice, please contact the secretary's office.

Accommodation

Attached you find a selection of hotel addresses. Please
book the room directly at the hotel.

Publication

We plan to publish the workshop papers

- in the workshop proceedings (ISBN 978-3-941521-28-5)
and on
- www.magneticbearings.org

For this reason, we need your agreement for the transfer of
your copyright (copyright transfer forms).

Deadlines and fixed dates

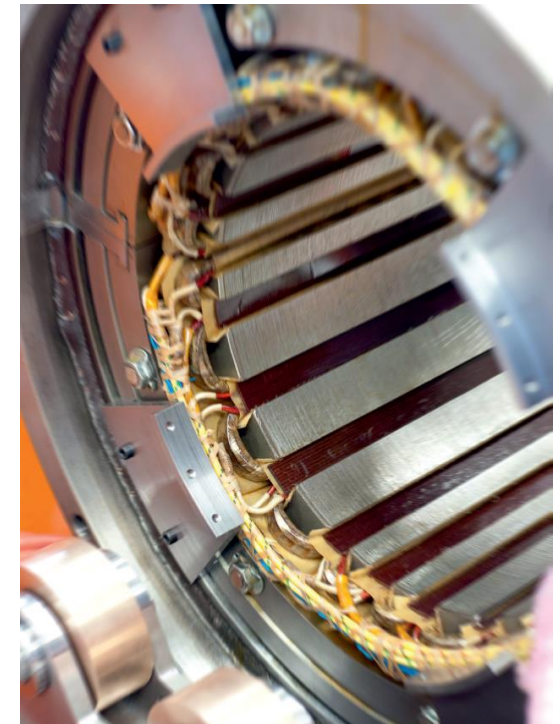
Deadline for paper submission
Workshop

Aug 16, 2019
Sept 2-3, 2019



12th WORKSHOP ON MAGNETIC BEARINGS ZITTAU-CHEMNITZ

Invitation/Program



2nd – 3rd September 2019



The idea of magnetic bearings is to support the rotors of machines by magnetic fields. Hereby the rotor levitates within the magnetic bearing in a contactless way. That avoids bearing friction as well as wear and tear. As a result, the absent of lubricants decreases the amount of flammable material in the system. Additionally the effort for conditioning and cooling of the lubricant can be reduced. In sum, the system safety is increased. In practice, the lifetime of the magnetic bearing is nearly not limited. Maintenance just as for conventional plain and roller bearings is not necessary. Moreover, by the use of inherent signals active magnetic bearings provide the opportunity of machine and plant diagnosis.

Besides the bearing itself, the development of active magnetic bearings includes the necessary sensors, control technology, power electronics, catcher bearings and also measuring data recording and analysis. For this reason, state of the art methods for modelling, simulation and rapid prototyping are applied.

The goal of the 12th workshop on magnetic bearings Zittau-Chemnitz is to present the latest research results in the area of magnetic bearings and to show the state of the art and development trends. Additionally, the workshop intends to support and improve the contact between those who develop and those who finally use the magnetic bearing technology. Thus, the event represents a crosslinking platform for developers, producers and operators.

I kindly invite you to the

12th Workshop on Magnetic Bearings Zittau-Chemnitz

and look forward to interesting contributions and discussions.



Prof. Dr.-Ing. Frank Worlitz

Focal Topics

- Design and optimisation of active magnetic bearings
- Catcher bearings
- Position measurement and control systems, actuators
- Modelling and simulation
- Diagnosis and reliability, intelligent algorithms
- Industrial and series applications

Workshop Program

Day 1: Monday, September 2, 2019

Time	Title/Author
from 11:00	Registration
Chairman: F. Worlitz	
12:20	Opening F. Worlitz Zittau/Görlitz University of Applied Sciences - IPM conference leader
12:30	Sensorlose Flussdichteregelung für axiale Magnetlager auf Basis fraktionaler Systeme R. Seifert, W. Hofmann Technische Universität Dresden
13:00	Untersuchung des Übertragungsverhaltens eines aktiven Magnetlagers mit Flussdichtemessung im Luftspalt R. Liebfried, W. Hofmann Technische Universität Dresden
13:30	Charakterisierung und Untersuchung der Regelstrecke eines streuflussbasierten Lagemesssystems für Magnetlager J. Rudolph, R. Werner Technische Universität Chemnitz
14:00	Sensorlose Regelung eines radialen Magnetlagers mittels optimierter Raumzeigermodulation D. Wimmer, M. Hutterer, M. Hofer, M. Schrödl Technische Universität Wien
14:30	Break
15:00	Entwicklung des Softwarewerkzeuges RED-CAT Rotor Element Dynamics – Calculation and Analysis Tool M. Shmachkov, H. Neumann, F. Worlitz Hochschule Zittau/Görlitz - IPM
15:30	Using Simscape/physical modelling in AMB and Backup Bearing Systems Jan Janse van Rensburg The MathWorks GmbH
16:00	Visiting the laboratories
19:00	Evening event

Workshop Program

Day 2: Tuesday, September 3, 2019

Time	Title/Author
from 08:00	Registration
Chairman: R. Werner	
08:30	Short welcoming of the rector Prof. Dr. phil. F. Albrecht Zittau/Görlitz University of Applied Sciences
08:40	Industrial steam turbines with AMB Operational experiences and comparison with conventionally born turbines C. Kern Siemens AG, Turbinenwerk Görlitz
09:10	Basic principles of analytical 2D radial magnetic bearing design M. Lang, K. Krenek
09:40	Magnetlagerauslegung unter Nutzung der Particle-Swarm-Optimization H. Neumann, F. Worlitz Hochschule Zittau/Görlitz - IPM
10:10	Entwicklung und Test eines Hochtemperatur-Sensorsystems für den Einsatz an Turbomaschinen S. Düsterhaupt, H. Hoffmann, H. Neumann, I. Noack, T. Rottenbach, F. Worlitz Hochschule Zittau/Görlitz - IPM
10:40	Break
Chairman: G. Budig	
11:10	Variable rotor unbalance damped via Active Magnetic Bearing A. Piłat, B. Sikora AGH University of Science and Technology Kraków
11:40	The initial study on the levitating spindle for machining processing B. Sikora, A. Piłat AGH University of Science and Technology Kraków
12:10	Stabilisierung magnetisch gelagerter Rotoren mit großem gyroskopischen Effekt M. Hutterer, D. Wimmer, M. Schrödl Technische Universität Wien
12:40	Beiträge zum lagerlosen Getriebemotor W. Gruber Johannes Kepler Universität Linz
13:10	Closing F. Worlitz Zittau/Görlitz University of Applied Sciences - IPM conference leader