



# PROGRAM

3<sup>RD</sup> TORSIONAL VIBRATION SYMPOSIUM  
MAY 13<sup>TH</sup> – 15<sup>TH</sup>, 2020

SALZBURG CONGRESS / AUSTRIA

Organized by the  
**VIBRA**  
**ASSOCIA**TION  
Schwingungstechnischer Verein

In cooperation with



# KEYNOTE SPEAKER

## DR. MARKO DEKENA

Executive Vice President

AVL List GmbH, Graz, Austria

# THE ADVISORY BOARD

## ROBERT GLÄSER

Winterthur Gas & Diesel Ltd., CH

## PROF. AHMET KAHRAMAN

The Ohio State University, US

## SHUHEI KAJIHARA

CSSC-MES Diesel Co., Ltd., CN

## DR. LOTHAR KURTZE

Vibration Association, AT

## DR. CHRISTOPH PRIESTNER

AVL List GmbH, AT

## DR. KLAUS PRENNINGER

Geislinger GmbH, AT

## PER RØNNEDAL

MAN Energy Solutions SE, DK

## MATTHIAS SCHUCHARDT

MTU Friedrichshafen GmbH, DE

## PETER SUNDSTRÖM

Wärtsilä Corporation, FI

## PROF. GEORG WACHTMEISTER

TU München, DE

## JONATHAN WALKER

Engine Market/Editorial Consultant, DE

## DR. RICK ZADOKS

Caterpillar Inc., US

# GOAL

The goal of the symposium is to organize a unique event for the international torsional vibration community. We welcome participants from all fields of torsional vibration research especially from:

- MARINE
- OIL & GAS
- RAIL TRACTION
- POWER GENERATION
- ON & OFF HIGHWAY
- INDUSTRIAL APPLICATIONS
- COMPRESSION SYSTEMS

# PROGRAM 3RD TORSIONAL VIBRATION SYMPOSIUM

\* The Program may be subject to change.

## WEDNESDAY: MAY 13<sup>TH</sup>, 2020

18:00	<b>WELCOME RECEPTION</b> , Restaurant M32
-------	---

## THURSDAY: MAY 14<sup>TH</sup>, 2020

07:30	<b>Registration desk opens</b>
09:00	<b>Official opening</b>
09:15	<b>KEYNOTE: Dr. Marko Dekena</b> Executive Vice President, AVL List GmbH, Graz Austria Virtualization as enabler for efficient closed loop engine development
10:00	Coffee break

	<b>Session 1A: Engine Development</b>	<b>Session 1B: System Reliability – Case Studies</b>
10:30	<b>Torsional vibrations and thermodynamics – How do they connect?</b> D. Schäpper Winterthur Gas & Diesel Ltd.	<b>Grid interaction phenomena</b> F. Petit Laborelec
10:55	<b>Beyond cranktrain dynamics</b> B. Mokdad, S. Clot, H. Bruns, K. Buczek, M. Bartosik Liebherr Components Colmar SAS, FEV Europe GmbH, FEV Polska Sp. z o.o.	<b>Motor cooling fan failures solved with modal and finite element analysis</b> J.-Y. Park, D.-J. Lee, Y.-J. Jang, T. Feese, Samsung Engineering Co. Ltd., Engineering Dynamics Incorporated
11:20	<b>Anti-vibration design of multi-cylinder engines considering torsional vibration characteristics</b> K. Jung, Y. Jo, J. Kim, J. Choi, J. Yu Hyundai Heavy Industries	<b>Torsional vibration on rotating machines in oil &amp; gas industry and power generation industry: a review of 6 cases.</b> N. Péton, J. Yu, S. Ganesh, R. Seshadri Bently Nevada
11:45	<b>Study of torsional vibration characteristics of a six cylinder diesel engine for various cylinder deactivated conditions</b> B. Mahanta, I. Piraner Cummins Inc.	<b>Coupling failure in VFD motor-blower trains due to torsional vibration</b> R. Chumai Machinosis Company Limited
12:10	Lunch	

	<b>Session 2A: Powertrain Components – Elastic Couplings and Dampers I</b>	<b>Session 2B: System Reliability – Marine Applications</b>
13:00	<b>Highly elastic elastomer couplings – indescribably complex?</b> M. Dylla Vulkan Deutschland	<b>Engine crankshaft failures due to torsional natural frequency excited by dual-fuel operation</b> G. Beshouri, T. Feese Advanced Engine Technologies Corporation, Engineering Dynamics Incorporated
13:25	<b>Nonlinear frequency dependent stiffness of rubber coupling under shear in real world applications</b> M. Hasan, R. Zadoks Rexnord Centa, Caterpillar Inc.	<b>Study on crankshaft angular speed variations caused by fuel injection system failures</b> M. Dereszewski, S. Drawing Gdynia Maritime University

13:50	<b>On recent developments for simulations and measurements of torsional elastic steel spring couplings</b> A. Thalhammer Geislinger GmbH	<b>Vibration performance of partially immersed propeller operations – A case study</b> C. Leontopoulos, V. Tsarsitalidis ABS Athens
14:15	<b>Impact of application-specific thermal conditions on viscous damper lifetime</b> M. Steidl, R. Zadoks, P. Kamasz, J. Xu Hasse & Wrede, Caterpillar Inc., Knorr-Bremse	<b>Torsional vibration stress and fatigue strength analysis of marine propulsion shafting system by operation patterns</b> D. Lee, Q.-D. Vuong, M. Song Mokpo National Maritime University
14:40	Coffee break	

	<b>Session 3A: Drilling and Fracturing</b>	<b>Session 3B: Power System Simulation I</b>
15:05	<b>New approach of modeling drill bit dynamics</b> M. Ichaoui, G.-P. Ostermeyer, F. Schiefer TU Braunschweig	<b>System approach to lower dynamic loads during resonance pass of a torsional vibration reduction system</b> F. Liebst, M. Geilen, P. Prystupa, S. Bindig ZF Friedrichshafen AG, GAT – Gesellschaft für Antriebstechnik mbH
15:30	<b>Torsional vibration simulation of hydraulic fracturing rigs and the development of a driveline vibration damper</b> L. H. Lucas Allison Transmission Inc.	<b>Analysis and data management of torsional vibration calculation for variant and sensitivity studies</b> J. Wolter, A. Rieß, M. Heinrich, P. Böhm MAN Energy Solutions SE
15:55	<b>New insights in torsional vibrations in downhole drilling systems</b> V. Kulke, D. Heinisch, A. Kück, H. Reckmann, G.-P. Ostermeyer, A. Hohl TU Braunschweig, Baker Hughes	<b>Creating innovative drivetrain concepts by use of agile model-based development methods</b> B. Juretzki IME Aachen GmbH Institut für Maschinenelemente und Maschinengestaltung
16:20	Coffee break	

	<b>Session 4A: Compressors</b>	<b>Session 4B: Measurement and Monitoring – Magneto-resistive Sensors</b>
16:45	<b>Torsional failures in hydrogen reciprocating compressor system with stepless capacity control</b> T. Feese, J.-Y. Park, D.-J. Lee Engineering Dynamics Incorporated, Samsung Engineering Co. Ltd.	<b>Applying magneto-resistive sensors for condition monitoring of machines</b> R. Slatter Sensitec GmbH
17:10	<b>Identify root cause of torsional-lateral coupled vibration in integrally geared compressor</b> R. Chumai Machinosis Company Limited	<b>Using non-contacting magnetostrictive sensors to measure torsional vibration responses in electric machinery</b> B. Howard, D. O'Connor, C. McMillen Bently Nevada
17:35	<b>Torsional damping benefits for reciprocating compressors</b> T. Stephens, K. Prenninger, C. Yeiser Ariel Corporation, Geislinger GmbH, RBTS	
18:00	End of Thursday's sessions	
20:00	<b>GALA Dinner</b> , Salzburg Residenz Palace	

## FRIDAY: MAY 15<sup>TH</sup>, 2020

8:00	Registration desk opens	
	<b>Session 5A: Hybrid and Electric Drives</b>	<b>Session 5B: Powertrain Components – Elastic Couplings and Dampers II</b>
9:00	<b>Optimizing electric drives for future demands and applications</b> I. Garcia de Madinabeitia Merino, J. Pohn, M. Mehrgou C. Priestner AVL List GmbH	<b>Potential effect of frequency-induced stiffening in rubber couplings in marine propulsion applications and the ramifications for torsional vibration analysis techniques</b> J. Braun, W. Wang, G. Funk idc Engineering
9:25	<b>Torsional vibration calculations of hybrid propulsion systems</b> P. Stürzl, C. Rauch, M. Schuchardt MTU Friedrichshafen GmbH	<b>Novel approach on thermo-mechanical coupled simulation and validation in rubber coupling</b> M. Hasan, R. Zadoks Rexnord Centa, Caterpillar Inc.
9:50	<b>VFD'S – How to prevent them from destroying your torsional system</b> M. A. Corbo No Bull Engineering, PLLC	<b>Energy flow and distribution study for torsional vibration dampers</b> H. J. Raja, P. Pingle, R. Channapattan, A. Khule Hodek Vibration Technologies Pvt. Ltd. Pune
10:15	<b>PHEV driveline reverse engineering and torsional vibration study during engine restart and booming maneuver</b> T. Enault Siemens Industry Software NV	<b>Solving gear problem with flexible coupling under thruster excitation</b> M. Hasan, S. V. Heesbeen, R.V. Laarhoven, P. Sundström Rexnord Centa, Wärtsilä NL, Wärtsilä Italia S.p.A.
10:40	Coffee break	
	<b>Session 6A: Measurement and Validation</b>	<b>Session 6B: Noise, Vibration, Harshness (NVH)</b>
11:05	<b>Enhanced torsional vibration model verification by means of cylinder pressure measurements</b> S. Persson, P. Orthmann MAN Energy Solutions	<b>Innovative solutions to reduce the transfer of structure borne noise in the powertrain of a hybrid mega yacht – a case study</b> C. Meichelböck, L. Kurtze Abeking & Rasmussen, Geislinger GmbH
11:30	<b>System requirements for torsional vibrations signal processing</b> G. Sikora, M. Dereszewski Gdynia Maritime University	<b>Overall powertrain analysis: NVH and RDE in combination</b> S. Maxl, D. Höfler, F. Burgstaller Tectos GmbH
11:55	<b>Rotational energy harvester for supplying self-sufficient sensor systems</b> M. Gerhardt, M. Koch, M. Weber, T. Bartel Fraunhofer LBF	<b>Step by step MBST approach for driveline torsional vibration study with application for booming and tip in attributes</b> T. Enault Siemens Industry Software NV
12:20	Lunch	

	<b>Session 7A: Power System Simulation II</b>	<b>Session 7B: Marine Propulsion</b>
13:20	<b>Comprehensive torsional simulation of generator sets – Part I: Calculation of torsional maps</b> B. Mokdad, C. Henninger, J. Keske Liebherr Components Colmar SAS, Liebherr Machines Bulle SA, Kohler Co.	<b>Influence on shaft alignment of heavy flywheel for torsional vibration</b> T. Mitsukiyo Mitsui E&S Machinery Co. Ltd.
13:45	<b>Comprehensive torsional simulation of generator sets – Part II: Capturing armature core twist of generator rotor assemblies in torsional models</b> J. Keske, B. Mokdad, C. Henninger Kohler Co., Liebherr Components Colmar SAS, Liebherr Machines Bulle SA	<b>Evaluation of torsional vibration characteristics of ship propeller - engine shaft system based on theoretical sensitivity analysis</b> K. Kanai, K. Honke, T. Ueda Kobe Steel Ltd.
14:10	<b>Application of digital twin technology on torsional vibration systems</b> C. Pestelli, P. Sundström, M. Almerigogna, F. Degano Wärtsilä Corporation	<b>Marine propulsion shafting excessive torsional vibrations: Case studies</b> B. Cowper, Z. Schramm LamaLo Technology Inc.
14:35	<b>Torsional elasticity of flange contact using finite element method</b> S. Virta Winterthur Gas & Diesel Ltd.	<b>The inside of a Voith-Schneider-Propeller</b> T. Rosenlöcher, M. Rösner, B. Schlecht Technische Universität Dresden
15:00	Coffee break	

	<b>Session 8A: Gear Systems</b>	<b>Session 8B: Rules and Regulations</b>
15:25	<b>Investigation of gearbox condition monitoring using low fidelity sensors</b> M. Rothemund FZG, TU München	<b>Marine propulsion – Revised class rules for passing barred speed range</b> E. Brodin, O. Deinboll, J. O. Nøkleby, S. Avanesov DNV GL - Maritime
15:50	<b>Observation of torsional vibration with RENK VIB-Monitor system</b> W. Sigmund Renk AG	<b>CIMAC Working Group 4 – Crankshaft rules – Who we are, what we do</b> P. Böhm, A. Rieß, T. Frondelius, J. Könnö, J. Dowell, D. Bell, Y. Hanawa MAN Energy Solutions SE

	<b>Session 9: Closing Session</b>
16:15	<b>Impact of emission reduction strategies on torsional vibrations</b> K. Prenninger, M. Härtl, G. Wachtmeister Geislinger GmbH, TU München
16:40	<b>Closing</b>
16:50	End

## SATURDAY: MAY 16<sup>TH</sup>, 2020

8:45	<b>Social Program: “Kehlsteinhaus” – Eagle’s Nest Tour / Bavarian Alps*</b> (not included in the Symposium fee / Participation fee: EUR 50,- (excl. 20% VAT))	*Should it be rainy or foggy, we offer an alternative museum program to Domquartier and “Haus der Natur” (House of nature) Salzburg.
------	--	--



# TORSIONAL VIBRATION SYMPOSIUM

## PARTICIPATION FEE

We would be delighted to welcome you to the 3<sup>rd</sup> Torsional Vibration Symposium in Salzburg.

Standard rate\*: EUR 1030\*,- (excl. 20% VAT)

Early bird rate\*: EUR 930\*,- (excl. 20% VAT) before January 31<sup>st</sup>, 2020

To register for the event, please visit: [torsional-vibration-symposium.com/registration](http://torsional-vibration-symposium.com/registration)

*\* The participation fee includes Welcome Reception, Gala Dinner, program booklet, digital proceedings, coffee breaks and lunches.*

## EXHIBITION & SPONSORING

We can also offer a limited number of exhibition stands and sponsoring opportunities.

Exhibition floor space fees: EUR 415,- / m<sup>2</sup> (excl. 20% VAT), minimum 6m<sup>2</sup>

## SYMPOSIUM LOCATION

Salzburg Congress, Auerspergstrasse 6, 5020 Salzburg/Austria

## CONTACT

The organizer of the event is the

**VIBRA  
ASSOCIATION**  
Schwingungstechnischer Verein

E-mail: [info@torsional-vibration-symposium.com](mailto:info@torsional-vibration-symposium.com)

Phone: +43 662 660 720

Website: [torsional-vibration-symposium.com](http://torsional-vibration-symposium.com)