

PROGRAM

3RD TORSIONAL VIBRATION SYMPOSIUM
MAY 11-13, 2022

SALZBURG CONGRESS | AUSTRIA

Organized by the

**VIBRA
ASSOCIA**TION

Schwingungstechnischer Verein

In cooperation with



KEYNOTE SPEAKER

PROF. KANGKI LEE

Senior Vice President
HPS, AVL List GmbH, Graz, Austria

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AIM

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

Wednesday: May 11, 2022

*Program may be subject to change

18:00	Welcome reception, Restaurant M32
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Thursday: May 12, 2022

07:30	Registration desk opens
09:00	Official opening
09:15	Keynote: Prof. KangKi Lee Senior Vice President of HPS, AVL List GmbH, Graz, Austria To move forward the green way in which the ICE can meet zero carbon ambition
10:00	Coffee break, exhibition opens

	Session 1A: Engine Development	Session 1B: System Reliability
10:30	Beyond cranktrain dynamics B. Mokdad, H. Bruns, S. Clot, K. Buczek, M. Bartosik Liebherr Components Colmar SAS, FEV Europe GmbH, FEV Polska Sp. z o.o.	Observation of torsional vibration with RENK VIB-Monitor system C. Wengert, W. Sigmund Renk AG
10:55	Anti-vibration design of multi-cylinder engines considering torsional vibration characteristics K. W. Jung, Y. J. Jo, J. W. Kim, J. W. Choi, J. D. Yu Hyundai Heavy Industries	Solving gear problem with flexible coupling under thruster excitation M. Hasan, P. Sundström, S. V. Heesbeen, R. V. Laarhoven Regal Rexnord, Wärtsilä NL, Wärtsilä Italia S.p.A.

11:20	Study of torsional vibration characteristics of a six cylinder diesel engine for various cylinder deactivated conditions B. Mahanta, I. Piraner Cummins Inc.	Engine crankshaft failures due to torsional natural frequency excited by dual-fuel operation T. Feese, G. Beshouri Advanced Engine Technologies Corporation, Engineering Dynamics Incorporated
11:45	Lunch	

	Session 2A: Powertrain Components – Elastic Couplings and Dampers I	Session 2B: System Reliability – Case Studies
13:00	Highly elastic elastomer couplings – Indescribably complex? M. Dylla VULKAN Deutschland	Motor cooling fan failures solved with modal and finite element analysis J. Y. Park, D. J. Lee, Y. J. Jang, T. Feese Samsung Engineering Co. Ltd., Engineering Dynamics Incorporated
13:25	Nonlinear frequency dependent stiffness of rubber coupling under shear in real world applications M. Hasan, R. Zadoks (retired) Regal Rexnord, Caterpillar Inc.	Torsional vibration on rotating machines in oil & gas industry and power generation industry: A review of 6 cases N. Péton, J. Yu, S. Ganesh, R. Seshadri Bently Nevada
13:50	On recent developments for simulations and measurements of torsional elastic steel spring couplings K. Windhofer, A. Thalhammer Geislinger GmbH	Grid interaction phenomena F. Petit Laborelec

14:15	Impact of application-specific thermal conditions on viscous damper lifetime M. Steidl, P. Kamasz, R. Zadoks (retired), J. Xu Hasse & Wrede, Caterpillar Inc., Knorr-Bremse	Investigation of gearbox condition monitoring using low fidelity sensors M. Rothmund FZG, TU München
14:40	Coffee break	

	Session 3A: Power System Simulation I	Session 3B: Measurement and Monitoring
15:05	System approach to lower dynamic loads during resonance pass of a torsional vibration reduction system F. Liebst, M. Geilen, P. Prystupa, S. Bindig ZF Friedrichshafen AG, GAT – Gesellschaft für Antriebstechnik GmbH	Is what is measured the real value? Mechanical systems measurement philosophy and principles M. Zeid BERG Propulsion AB
15:30	Analysis and data management of torsional vibration calculation for variant and sensitivity studies J. Wolter, P. Böhm, A. Rieß, M. Heinrich MAN Energy Solutions SE	Investigation of gearbox condition monitoring using low fidelity sensors M. Rothmund FZG, TU München
15:55	Creating innovative drivetrain concepts by use of agile model-based development methods B. Juretzki IME Aachen GmbH Institut für Maschinenelemente und Maschinengestaltung	Using non-contacting magnetostrictive sensors to measure torsional vibration responses in electric machinery B. Howard, D. O'Connor, C. McMillen Bently Nevada
16:20	Coffee break	

	Session 4A: Compressors	Session 4B: Drilling and Fracturing
16:45	<p>Torsional failures in hydrogen reciprocating compressor system with stepless capacity control</p> <p>T. Feese, J. Y. Park, D. J. Lee</p> <p>Engineering Dynamics Incorporated, Samsung Engineering Co. Ltd.</p>	<p>New insights in torsional vibration in downhole drilling systems</p> <p>V. Kulke, D. Heinisch, A. Kück, H. Reckmann, G.-P. Ostermeyer, A. Hohl</p> <p>TU Braunschweig, Baker Hughes</p>
17:10	<p>Torsional damping benefits for reciprocating compressors</p> <p>T. Stephens, K. Prenninger, C. Yeiser</p> <p>Ariel Corporation, Geislinger GmbH, RBTS</p>	<p>New approach of modeling drill bit dynamics</p> <p>F. Schiefer, M. Ichaoui, G.-P. Ostermeyer</p> <p>TU Braunschweig</p>
17:35	End of Thursday's sessions	
18:30	Aperitif, Salzburg Residenz Palace	
19:30	Gala Dinner	

Friday: May 13, 2022

08:00	Registration desk opens
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	Session 5A: Hybrid and Electric Drives	Session 5B: Powertrain Components – Elastic Couplings and Dampers II
09:00	<p>Optimizing electric drives for future demands and applications</p> <p>C. Priestner, I. Garcia de Madinabeitia Merino, J. Pohn, M. Mehrgou</p> <p>AVL List GmbH</p>	<p>Novel approach on thermo-mechanical coupled simulation and validation in rubber coupling</p> <p>M. Hasan, R. Zadoks (retired)</p> <p>Regal Rexnord, Caterpillar Inc.</p>
09:25	<p>Torsional vibration calculations of hybrid propulsion systems</p> <p>M. Schuchardt, P. Hinkelmanns</p> <p>Rolls-Royce Solutions GmbH</p>	<p>Calculation of steady-state temperature of rubber damper based on torsional vibration analysis of internal combustion engine</p> <p>T. Parikyan, T. Kovacic, L. Jordan, M. Mulmann, S. Bonù</p> <p>AVL List GmbH, AUDI AG, AGLA Power Transmission S.p.a.</p>
09:50	<p>PHEV driveline reverse engineering and torsional vibration study during engine re-start and booming maneuver</p> <p>T. Enault</p> <p>Siemens Industry Software NV</p>	<p>Session 5B: Rules and Regulations</p> <p>Marine propulsion – Revised class rules for passing barred speed range</p> <p>E. Brodin, O. Deinboll, J. O. Nøkleby, S. Avanesov</p> <p>DNV GL – Maritime</p>
10:15	<p>VFD'S – How to prevent them from destroying your torsional system</p> <p>M. A. Corbo</p> <p>No Bull Engineering, PLLC</p>	<p>CIMAC Working Group 4 – Crankshaft rules – Who we are, what we do</p> <p>P. Böhm, A. Rieß, T. Frondelius, J. Könnö, J. Dowell, D. Bell, Y. Hanawa</p> <p>MAN Energy Solutions SE</p>
10:40	Coffee break	

	Session 6A: Measurement and Validation	Session 6B: Noise, Vibration, Harshness (NVH)
11:05	<p>System requirements for torsional vibrations signal processing</p> <p>G. Sikora, M. Dereszewski Gdynia Maritime University</p>	<p>An experimental set-up to investigate engine gear rattle problems</p> <p>A. Kahraman, A. Donmez Department of Mechanical and Aerospace Engineering, The Ohio State University</p>
11:30	<p>Monitoring of transient torsional vibrations on a generator shaft in a high-power laboratory</p> <p>D. Rouwenhorst, J. Hermann IfTA Ingenieurbüro für Thermoakustik GmbH</p>	<p>Overall powertrain analysis: NVH and RDE in combination</p> <p>D. Höfler, S. Maxl, F. Burgstaller Tectos GmbH</p>
11:55	<p>Rotational energy harvester for supplying self-sufficient sensor systems</p> <p>M. Matthias, M. Gerhardt, M. Koch, M. Weber, T. Bartel Fraunhofer LBF</p>	<p>Innovative solutions to reduce the transfer of structure borne noise in the powertrain of mega yachts</p> <p>L. Kurtze Vibration Association</p>
12:20	Lunch	

	Session 7A: Marine Propulsion	Session 7B: Power System Simulation II
13:20	<p>Torsional vibration monitoring of large container vessel propulsion train</p> <p>H. Ohorn, H. Mohr, A. Thalhammer CPO Containerschiffreederei, GasKraft Engineering, Geislinger GmbH</p>	<p>Comprehensive torsional simulation of generator sets – Part I: Calculation of torsional maps</p> <p>B. Mokdad, C. Henninger, J. Keske Liebherr Components Colmar SAS, Liebherr Machines Bulle SA, Kohler Co.</p>

13:45	<p>How do the merits of iCER for engine performance affect torsional vibrations?</p> <p>P. Rebholz, D. Schäpper</p> <p>Winterthur Gas & Diesel Ltd., Chord X Pte. Ltd.</p>	<p>Comprehensive torsional simulation of generator sets – Part II: Capturing armature core twist of generator rotor assemblies in torsional models</p> <p>J. Keske, B. Mokdad, C. Henninger</p> <p>Kohler Co., Liebherr Components Colmar SAS, Liebherr Machines Bulle SA</p>
14:10	<p>Marine propulsion shafting excessive torsional vibrations: Case studies</p> <p>B. Cowper, Z. Schramm</p> <p>LamaLo Technology Inc.</p>	<p>Torsional elasticity of flange contact using finite element method</p> <p>S. Virta</p> <p>Winterthur Gas & Diesel Ltd.</p>
14:35	<p>Influence on shaft alignment of heavy flywheel for torsional vibration</p> <p>T. Mitsukiyo</p> <p>Mitsui E&S Machinery Co. Ltd.</p>	<p>Illustrating the benefits of a torsional vibration damper for eliminating the barred speed range by using hybrid finite element modeling methods</p> <p>C. Leontopoulos, O. Vlachos, A. Thalhammer</p> <p>ABS Greece, Geislinger GmbH</p>
15:00	Coffee break	

Session 8:
Digital Twin

15:25	<p>Digital twin of induction motors for torsional response analysis of electric drive trains</p> <p>T. P. Holopainen</p> <p>ABB Motors and Generators</p>
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15:50	<p>Application of digital twin technology on torsional vibration systems</p> <p>C. Pestelli, P. Sundström, M. Almerigogna, F. Degano</p> <p>Wärtsilä Corporation</p>
<p>Session 9: Closing session</p>	
16:15	<p>New opportunities of big data analytics for torsional vibration analysis</p> <p>A. Thalhammer</p> <p>Geislinger GmbH</p>
16:40	Closing
16:50	End

Saturday: May 14, 2022

08:45	<p>Social program: "Kehlsteinhaus" – Eagle's Nest Tour / Bavarian Alps* (not included in the Symposium fee / Participation fee: EUR 50,- (excl. 20% VAT))</p> <p>*Should it be rainy or foggy, we offer an alternative museum program with visits to Domquartier and "Haus der Natur" (House of Nature) Salzburg.</p>
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PARTICIPATION

We would be delighted to welcome you to the Torsional Vibration Symposium 2022 in Salzburg.

Early bird rate: EUR 930,-* (excl. 20% VAT, until February 11, 2022)
Standard rate: EUR 1.030,-* (excl. 20% VAT)

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

EXHIBITION & SPONSORING

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

Exhibition floor space fees: EUR 415,- / m² (excl. 20% VAT, min. 6 m²)

SYMPOSIUM LOCATION

Salzburg Congress | Auerspergstrasse 6 | 5020 Salzburg | Austria

EVENT MODERATION

Ulrich Walter

CONTACT

The organizer of the event is the

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ASSOCIATION

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