



12th International Conference on
VIBRATIONS IN ROTATING MACHINES
Graz, February 15th to 17th, 2017



SPONSORS



AVL LIST GmbH
Hans-List-Platz 1
8020 Graz
Austria

<https://www.avl.com>



ELIN Motoren
Elin-Motoren-Straße 1
8160 Preding/Weiz
Austria

<http://www.elinmotoren.at>



General Electric
Freisinger Landstraße 50
85748 Garching bei München
Germany

<http://www.ge.com>



Graz Tourismus
Messeplatz 1 / Messeturm
8010 Graz
Austria

<https://www.graztourismus.at>



MTU
Dachauer Straße 665
80995 München
Germany

<http://www.mtu.de>



Technische Universität Graz
Rechbauerstraße 12
8010 Graz
Austria

<https://www.tugraz.at>

ESSENTIALS AND USEFUL HINTS



Free Wifi!

Feel free to use the university's wireless lan at no charge. Simply log in to eduroam, the account information is provided to you on your name badge.



Scientific Conference Book

The new scientific conference book constitutes the refereed proceedings of SIRM2017. You can find it on the USB stick in your conference bag.



Networking Area

During the conference days an exhibition is taking place in front of Hörsaal H (NTEG230EG). You will find representatives of premium sponsors and exhibitors presenting you the latest trends and solutions. All food and beverages will be served in this area.



Help

For questions please contact the conference team with red name badges.

	HS H: „ULRICH SANTNER“ (NTEG230E)	HS A: NT01004
8:00 – 9:00	Registration (Foyer, NTEG228)	
9:00 – 10:30	Opening	
10:30 – 11:00	Coffee break (Foyer, NTEG228)	
Topics	S01 ROTOR DYNAMICS 1 CHAIR: HORST ECKER	S02 FOIL BEARINGS CHAIR: RAINER NORDMANN
11:00 – 11:30	Comparison of Measured and Calculated Vibrations of a Turbocharger <i>A. Fuchs, T. Klimpel, J. Schmied, K.-H. Rohne</i>	On the Importance of Frictional Energy Dissipation in the Prevention of Undesirable Self-Excited Vibrations in Gas Foil Bearing Rotor Systems <i>T. Leister, C. Baum, W. Seemann</i>
11:30 – 12:00	Beitrag zur zielsicheren Auslegung von Quetschöldämpfern <i>B. Domes</i>	Experimentelle Analyse der nichtlinearen Schwingungen eines starren Rotors in Gasfolienlagern <i>C. D. Kayo, R. Hoffmann, R. Lieblich</i>
12:00 – 12:30	A two-lobe journal bearing with adjustable gap geometry for vibration reduction of flexible rotors <i>B. Pfau, R. Markert</i>	Selected operational problems of high-speed rotors supported by gas foil bearings <i>G. Zywica, P. Baginski, J. Kicinski</i>
12:30 – 13:30	Lunch (Foyer, NTEG228)	
Topics	S03 STABILITY CHAIR: RICHARD MARKERT	S04 BEARINGS 1 CHAIR: ROBERT LIEBICH
13:30 – 14:00	Vibro-acoustical behavior of a turbocharger housing excited by oil-film induced rotor oscillations <i>A. Boyaci, W. Seemann</i>	Simulation and experimental validation of a misaligned rotor in journal bearings using different levels of detail <i>A. Krinner, W. Tsunoda, C. Wagner, T. Berninger, T. Thümmel, D. Rixen</i>
14:00 – 14:30	Actively Controlled Journal Bearings <i>J. Tüma, J. Šimek, M. Mahdal, J. Skuta, R. Wagnerová</i>	Dynamisches Verhalten von EHD-Kontakten unter Nutzung eines regularisierten, masseerhaltenden Kavitationsalgorithmus <i>S. Nitzschke, E. Woschke, C. Daniel</i>
14:30 – 15:00	Simulative und experimentelle Vorhersage der Instabilität in Rotorsystemen mit Dichtungen <i>C. Wagner, W. Tsunoda, T. Berninger, T. Thümmel, D. Rixen</i>	Transient run-up simulations of rotors in journal bearings considering mass-conserving cavitation approaches <i>G. Nowald, R. Schmoll, B. Schweizer</i>
15:00 – 15:30	Coffee break (Foyer, NTEG228)	
Topics	S05 FRICTION CHAIR: TOMASZ SZOLC	S06 BEARINGS 2 CHAIR: JAROSLAV ZAPOMEL
15:30 – 16:00	On the Incorporation of Friction into a Simultaneously Coupled Time Domain Model of a Rigid Rotor Supported by Air Foil Bearings <i>S. von Osmanski, J. S. Larsen, I. F. Santos</i>	Re-Design of a tilting pad bearing for a retrofitted steam turbine – A case study of an open collaboration between supplier and customer <i>U. Mermertas, Fl. Hiss, K. De Bauw, C. Brichart</i>
16:00 – 16:30	Control strategies for stick-slip avoidance in flexible shaft driven systems <i>H. I. Weber, G. R. de Paula</i>	The experimental identification of the dynamic coefficients for two hydrodynamic journal bearings <i>Ł. Breńkacz, G. Zywica</i>

	HS H: „ULRICH SANTNER“ (NTEG230E)	HS A: NT01004
Topics	S07 ROTOR DYNAMICS 2 CHAIR: HORST ECKER	S08 MONITORING 1 CHAIR: JIŘÍ TŮMA
9:00 – 9:30	Modal Analysis of rotors under special support conditions <i>G. Mikota</i>	Field measurement techniques and instrumentation for torsional vibrations determination <i>C. Grislin, N. Peton, G. Cousin, N. Denisot</i>
9:30 – 10:00	Vibrations of rotors partially filled with liquids in hydrodynamically lubricated journal bearings <i>D. Kern, B. Wiegert, M. Groß</i>	Modellbasiertes Monitoring an magnetgelagerten Rotoren <i>J. Maierhofer, T. Thümmel, D. Rixen</i>
10:00 – 10:30	Betriebsfeste Auslegung eines Präzessionsdynamos <i>S. Beisitzer, M. Beiteltschmidt</i>	Vibration Signal Analysis for the Lifetime-Prediction and Failure Detection of Future Turbofan Components <i>N. Mokhtari, M. Grzeszkkowski, C. Gühmann</i>
10:30 – 11:00	Coffee break (Foyer, NTEG228)	
Topics	S09 ELECTRICAL MACHINES 1 CHAIR: ERICH SCHMIDT	S10 MONITORING 2 CHAIR: KATRIN ELLERMANN
11:00 – 11:30	Rotordynamic computation of a permanent-magnetic excited synchronous machine due to electromagnetic force excitation <i>M. Clappier, L. Gaul</i>	Elevated vibration of a 110 Mw generator bearing <i>S. Drygin, N. Peton</i>
11:30 – 12:00	Influence of electromagnetic field damping on the vibration stability of soft mounted induction motors with sleeve bearings, based on a multi-body model <i>U. Werner</i>	Vibration diagnostics of gas turbine with rotor crack <i>P. Popaleny</i>
12:00 – 12:30	The effect of field damping on rotordynamics of non-salient pole generators <i>F. Boy, H. Hetzler</i>	Comparison of Numerical Forced Response Predictions with Experimental Results Obtained in a Subsonic Test Turbine Facility <i>A. Marn, F. Schönleitner, M. Mayr, F. Heitmeir</i>
12:30 – 13:30	Lunch (Foyer, NTEG228)	
Topics	S11 TORSIONAL VIBRATIONS CHAIR: RAINER NORDMANN	S12 BLADE VIBRATIONS CHAIR: RICHARD MARKERT
13:30 – 14:00	Enhanced utilization of structural damping of rotating machines using impulsively shaped torsional moments <i>T. Pumhössel, B. Hopfner, H. Ecker</i>	Einfluss einer 5-Loch-Sonde auf die Schwingungscharakteristik eines Niederdruckturbinenrotors während experimenteller Strömungsmessungen <i>F. Schönleitner, T. Selic, A. Marn, F. Heitmeir</i>
14:00 – 14:30	Reduction of belt flutter by active control of torsional vibrations in drivelines with power transmission belts <i>M. ter Beek, D. Söffker</i>	Reduced Order Modeling of Mistuned Bladed Disks under Rotation <i>S. Willeke, L. Panning-von Scheidt, J. Wallaschek</i>
14:30 – 15:00	Drehschwingungskompensation und Auswirkung auf die Druckqualität in Bogenoffset-Druckmaschinen <i>N. Norrick, S. Neeb</i>	More flexible damping systems for blades and vanes <i>A. Hartung, H.-P. Hackenberg, U. Retze</i>
15:00 – 15:30	Coffee break (Foyer, NTEG228)	

Topics	S13 BALANCING CHAIR: ROBERT LIEBICH	S14 PARAMETRIC EXCITATION CHAIR: THOMAS PUMHÖSSEL
15:30 – 16:00	Effectiveness of simplified modal weight sets for residual modal unbalance assessment at operating speed <i>M. L'vov</i>	Stabilitätsuntersuchung parametererregter linearer Schwingungssysteme mit Laufzeitverzögerung am Beispiel einer Bogenoffset-Druckmaschine <i>S. Neeb, N. Norrick</i>
16:00 – 16:30	Hochlaufsimulation selbsttätig auswuchtender Rotoren unter Berücksichtigung geschwindigkeitsabhängiger Strömungswiderstandskoeffizienten <i>L. Spannan, C. Daniel, E. Woschke</i>	An approach to account for multiple interfering parametric resonances and anti-resonances applied to examples from rotor dynamics <i>T. Breunung, F. Dohnal, B. Pfau</i>
16:30 – 17:00	Practical Approach for Solving Vibrations of Large Turbine and Generator Rotors – Reconciling the Discord between Theory and Practice <i>Z. Racic, M. Racic</i>	Torsional dynamics of a double rotor HAWT with a differential planet gear <i>E. Shalimova, L. Klimina, K.-H. Lin</i>
19:00 – 22:00	Conference Dinner (Gösserbräu Graz, Neutorgasse 48, 8010 Graz)	

17TH FEB

CONFERENCE DAY 3

Topics	HS H: „ULRICH SANTNER“ (NTEG230E)	HS A: NT01004
	S15 ELECTRICAL MACHINES 2 CHAIR: RICHARD MARKERT	S16 ROTOR DYNAMICS 3 CHAIR: HORST ECKER
9:00 – 9:30	Entstehung und Analyse radialer Kraftwellen in elektrisch rotierenden Maschinen <i>S. Haas, K. Ellermann</i>	On dynamics and stability of the automotive engine turbocharger rotor supported by the electrodynamic magnetic bearings <i>T. Szolc</i>
9:30 – 10:00	Determining a function for the damping coefficient of a laminated stack <i>C. Zahalka, K. Ellermann</i>	Study of the influence of a delayed yielding phenomenon in magnetorheological damping devices on the vibration attenuation of a Jeffcott rotor <i>J. Zapomel, P. Frfecki</i>
10:00 – 10:30	Bifurcations of relative equilibria sets of a massive point on rough rotating surfaces <i>A. Burov, E. Shalimova</i>	Turbocharger dynamic analysis: Advanced design simulation in time domain using CFD predicted thermal boundary conditions <i>S. Bukovnik, A. Diemath, G. Offner, L. Smolik</i>
10:30 – 11:00	Coffee break (Foyer, NTEG228)	
	S17 ROTOR DYNAMICS 4 CHAIR: RAINER NORDMANN	
11:00 – 11:30	Simple electromagnetic motor model for torsional analysis of variable speed drives with an induction motor <i>T. Holopainen, A. Arkkio</i>	
11:30 – 12:00	Design and practical realization of an innovative flywheel concept for industrial applications <i>L. Quurck, M. Richter, M. Schneider, D. Franz, S. Rinderknecht</i>	
12:00 – 12:30	Einfluss des Gehäuses und der Maschinenaufstellung auf die Rotordynamik in elektrischen Maschinen <i>B. Weilharter, H. Lang, G. Ofner, C. Schug</i>	
12:30 – 13:45	CLOSING SESSION CHAIRS: FRANZ HEITMEIR, KATRIN ELLERMANN	
12:45 – 13:45	Lunch (Foyer, NTEG228)	

FLOOR PLAN

