

# INTERNATIONAL GEAR CONFERENCE

**26<sup>th</sup>-28<sup>th</sup> August 2014**

**Espace Tête d'Or**

**103 Boulevard Stalingrad**

**Lyon Villeurbanne**

**FRANCE**

*(near the Parc de la Tête d'Or)*

## FINAL PROGRAMME



# INTERNATIONAL GEAR CONFERENCE

## Organising committee

### National committee

Jérôme BRUYERE	<i>INSA Lyon - LaMCoS</i>
Jean-Pierre DE VAUJANY	<i>INSA Lyon - LaMCoS</i>
Michèle GUINGAND	<i>INSA Lyon - LaMCoS</i>
Philippe VELEX	<i>INSA Lyon - LaMCoS, conference chair</i>
Fabrice VILLE	<i>INSA Lyon - LaMCoS</i>
Christophe CHANGENET	<i>ECAM Lyon</i>
Joël RECH	<i>ENISE</i>
Joël PERRET-LIAUDET	<i>ECL</i>
Michel OCTRUE	<i>CETIM</i>

### International committee

Christian BRECHER	<i>University of Aachen (Germany)</i>
David DOONER	<i>University of Puerto-Rico (USA)</i>
Alfonso FUENTES	<i>Polytechnic University of Cartagena (Spain)</i>
Srecko GLODEZ	<i>University of Maribor (Slovenia)</i>
Carlo GORLA	<i>Politecnico di Milano (Italy)</i>
Haruo HOUJOH	<i>Tokyo Institute of Technology (Japan)</i>
Don HOUSER	<i>Ohio State University (USA)</i>
Ahmet KAHRAMAN	<i>Ohio State University (USA)</i>
Aizoh KUBO	<i>Research Institute for Applied Sciences, Kyoto (Japan)</i>
Teik LIM	<i>University of Cincinnati (USA)</i>
Geng LIU	<i>Northwestern Polytech. University (China)</i>
Susumu MATSUMOTO	<i>Waseda University (Japan)</i>
H. Nevzat OZGUVEN	<i>Middle East Technical University Ankara (Turkey)</i>
Robert PARKER	<i>Virginia Tech (USA)</i>
José PEDRERO	<i>UNED (Spain)</i>
Datong QIN	<i>Chongqing University (China)</i>
Bernd SAUER	<i>University of Kaiserslautern (Germany)</i>
Berthold SCHLECHT	<i>University of Dresden (Germany)</i>
Jorge SEABRA	<i>University of Porto (Portugal)</i>
Brian SHAW	<i>University of Newcastle (UK)</i>
Zhaoyao SHI	<i>Beijing University of Technology (China)</i>
Avinash SINGH	<i>General Motors (USA)</i>
Ray SNIDLE	<i>Cardiff University (UK)</i>
Karsten STAHL	<i>Technische Universität München (Germany)</i>

# Schedule at a glance

	DAY 1	DAY 2	DAY 3
8:00 - 8:30	Registration		
8:30 - 9:00			
9:00 - 9:30	Welcome address	Sessions (9-12)	Sessions (25-28)
9:30 - 10:00	PLENARY SESSION (4 speakers)	BREAK	BREAK
10:00 - 10:30			
10:30 - 12:00		Sessions (13-16)	Sessions (29-32)
12:00 - 12:30			<b>Best Paper Award</b>
12:30 - 14:00	LUNCH /posters	LUNCH /posters	LUNCH /posters
14:00 - 16:00	Sessions (1-4)	Sessions (17-20)	Sessions (33-34)
16:00 - 16:30	BREAK	BREAK	
16:30 - 18:30	Sessions (5-8)	Sessions (21-24)	END
19:00 - later		Banquet at Bocuse	

**4 parallel sessions**

## Tuesday 26<sup>th</sup> morning

8:00 - 9:00	<b>REGISTRATION AT ESPACE TÊTE D'OR</b>
9:00 - 9:30	WELCOME ADDRESS
9:30 - 12:30	<p><b>PLENARY SESSION, Moderator: Philippe Velex, INSA Lyon, France</b></p> <p>1 - High ratio transmissions – the key component for future mechatronic systems <i>Bernd-Robert Höhn, Technical University of Munich, Germany</i></p> <p>2 - Tribo-dynamic behavior of gear pairs <i>Ahmet Kahraman, The Ohio State University, USA</i></p> <p>3 - Influence of Enveloping Stressed Volume and Trochoidal Interference on Gear Tooth Durability <i>Aizoh Kubo, Kyoto University, Japan</i></p> <p>4 - Gearbox power losses - Influence of lubricants, tooth and casing geometry <i>Jorge Seabra, University of Porto, Portugal</i></p>
12:30 - 14:00	LUNCH - POSTERS

# Tuesday 26<sup>th</sup> - afternoon

	Room 1	Room 2
	<b>Session 1: Worm gears</b> <i>Session Chair: Michel Octrue, CETIM, France</i>	<b>Session 2: Tooth modifications</b> <i>Session Chair: H. Nevzat Özgüven, MTU, Turkey</i>
14:00 - 16:00	<p>1- Measurement of helix deviation for planar double enveloping hourglass worms <i>B. Yu, Z. Y. Shi, L. Yan, M. Zhang, F. Y. He, Y. Ye, Y. Fu</i></p> <p>2- Calculation of the Efficiency of Worm Gear Drives <i>B. Magyar, B. Sauer</i></p> <p>3- Strength of plastic helical wheels meshed with various types of worms <i>T. Koide, Y. Ishida, A. Ueda, M. Nomura, A. Tamura</i></p> <p>4- Loaded behaviour of steel/bronze worm gear <i>D. Jbily, M.Guingand, J.-P. de Vaujany</i></p>	<p>1- Optimal Modifications on Helical Gears for good Load Distribution and minimal Wear <i>C. Lohmann, M. Walkowiak, P. Tenberge</i></p> <p>2- Profile optimization of the teeth of the double rack-and-pinion gear mechanism in the MCE-5 VCRI <i>M. Duchemin, V. Collée</i></p> <p>3- A procedure to determine the optimum flank line modifications for planetary gear configurations <i>U. Kissling, H. Dinner</i></p> <p>4- Multi-objective optimisation of profile modifications in spur and helical gears- an analytical approach <i>J. Bruyère, P. Velez</i></p>
16:00 - 16:30	BREAK	
	<b>Session 5: Hypoid/bevel gears</b> <i>Session chair: Alessio Artoni, University of Pisa, Italy</i>	<b>Session 6: Gear noise (I)</b> <i>Session Chair: Stephanos Theodossiades, Loughborough University, UK</i>
16:30-18:00	<p>1- Improvement of the excitation behavior of bevel gears considering tolerance fields caused by manufacturing and assembly processes <i>C. Brecher, M. Brumm, P. Knecht</i></p> <p>2- Hypoid gears with involute teeth <i>D.B. Dooner</i></p> <p>3- Increasing the load-capacity of bevel gears by the use of modern optimization methods <i>S. Schumann, M. Senf, B. Schlecht</i></p>	<p>1- Effects of rib arrangements on radiated noise of gearbox <i>J.P. Wang, S.Chang, G.Liu</i></p> <p>2- Low noise design of a truck timing multi-stage gear: robust optimization of tooth surface modifications <i>A. Carbonelli, E. Rigaud, J. Perret-Liaudet, E. Pelloli, D. Barday</i></p> <p>3- Low power transmission plastic gear trains: which parameters affect the subjective acoustic quality? <i>R.Faventi, H.Hopper, M.Torrente Rodriguez</i></p>

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	Room 3	Room 4
	<b>Session 3: Manufacturing (I)</b> <i>Session Chair: Fabrice Ville, INSA Lyon, France</i>	<b>Session 4: Plastic gears</b> <i>Session chair: J-Pierre de Vaujany, INSA Lyon, France</i>
14:00-16:00	<p>1- Manufacturing method of double helical gears using multi-axis control and multi-tasking machine tool <i>K. Kawasaki, I. Tsuji, H. Gunbara</i></p> <p>2- Gear Tooth Surface Roughness of Helical Gears Manufactured by a Form Milling Cutter <i>M. Svahn, L. Vedmar, C. Andersson</i></p> <p>3- Grinding face-hobbed hypoid gears through full exploitation of 6-axis hypoid generators <i>A. Artoni, M. Gabiccini, M. Guiggiani</i></p> <p>4- Process Model for Honing Larger Gears <i>F. Klocke, M. Brumm, M. Kampka</i></p>	<p>1- New Japanese Standard JIS B 1759 on Load Capacity of Plastic Gears <i>I. Moriwaki, A. Ueda, M. Nakamura, K. Yoneda, D. Iba</i></p> <p>2- Gear tooth deflection of spur polymer gears <i>B. Trobentar, S. Glodež, B. Zafošnik</i></p> <p>3- Experimental and Numerical Study of a Loaded Cylindrical Glass Fibre Reinforced PA6 Gear. <i>J. Cathelin, M. Guingand, J-P. de Vaujany, L. Chazeau</i></p> <p>4- Lifetime and meshing teeth temperature of plastic crossed helical gear: case of grease lubrication <i>M. Takahashi, T. Itagaki, H. Takahashi, T. Koide</i></p>
16:00-16:30	BREAK	
	<b>Session 7: Manufacturing and design (I)</b> <i>Session chair: Aizoh Kubo, Research Institute for Applied Sciences, Kyoto, Japan</i>	<b>Session 8: Rollers-Roller Bearings</b> <i>Session chair: Teik Lim, University of Cincinnati, USA</i>
16:30-18:00	<p>1- Improvement of the design method for helical gears by considering manufacturing related bias errors <i>C. Brecher, M. Brumm, M. Hellmann</i></p> <p>2- Investigation of the effect of manufacturing errors on dynamic characteristics of herringbone planetary gear trains <i>F. Ren, D. Qin</i></p> <p>3- An approach of pairing bevel gears from conventional cutting machine with gears produced on 5-axis milling machine <i>I. Bae, , V. Schirru</i></p>	<p>1- Mechanical Power Losses of Full-Complement Needle Bearings of Planetary Gear Sets <i>D. Talbot A.Stilwell A. Kahraman, A. Singh, I. Napau</i></p> <p>2- A Finite Element Evaluation of a Bearing Instrumentation Method for Evaluating Bearing Load Distributions and Roller Stresses of the Final Drive of a Wind Turbine Gearbox <i>J. Austin D. Talbot D. Houser, S. Vijayakar</i></p> <p>3- Modeling and analysis of a planetary roller screw <i>A. Baccar, J.Y.Lambert, A.A.Lubrecht</i></p>

# Wednesday 27<sup>th</sup> - morning

	Room 1	Room 2
	<b>Session 9: Gear design (I)</b> <i>Session chair: Michèle Guingand, INSA Lyon, France</i>	<b>Session 10: Gear noise and vibration (I)</b> <i>Session chair: Haruoh Houjoh, Tokyo Institute of Technology, Japan</i>
8:30 - 10:00	<p>1- Pitch Factor Analysis for Symmetric and Asymmetric Tooth Gears <i>A.L. Kapelevich</i></p> <p>2- Effects of the Design Parameters of Involute Gears Generated by Rack-Cutters <i>G. Figliolini, P. Rea</i></p> <p>3- Graph theory based gear transmission chain configuration modelling <i>X. Yang, H. Wang, B. Han, L. Han</i></p>	<p>1- Noise characteristics of the simplified gear box by wind turbine load <i>C.I. Park</i></p> <p>2- Effects of Contact Ratios on Mesh Stiffness of Helical Gears for Lower Noise Design <i>L. Liu, Y.F. Ding, L.Y. Wu, G. Liu</i></p> <p>3- Dynamic modeling of planetary gear transmission coupled with gearbox vibrations <i>Z.X. He, L.H. Chang, Q.T. Liu</i></p>
10:00 - 10:30	BREAK	
	<b>Session 13: Gear design (II)</b> <i>Session chair: Rathindranath Maiti, IIT Kharagpur, India</i>	<b>Session 14: Gear noise (II)</b> <i>Session chair: Geng Liu, Northwestern Polytech. University, China</i>
10:30 - 12:30	<p>1- Development of a User Friendly Interface For Design And Analysis Of Parallel Axes Gears Based On International Standards Including Quasi Static Transmission Error Curves <i>B. Sahin, A. Akpolat, O. Yildirim, O. Uctu, A. Ersoz</i></p> <p>2- A study on the design of asymmetric spur gears in gear pump applications <i>S. Olguner, I. H. Filiz</i></p> <p>3- Research on gear integrated error curves <i>Z.H. Shu, Z.Y. Shi, H.F. Chen, J.C. Lin, Y. Kang</i></p> <p>4- The latest design technologies for gear devices with great transmission ratios <i>S. Li</i></p>	<p>1- Dynamic and acoustic simulation of helicopters drive trains <i>G. Roulois, Y. Skladanek, F. Marrot, J. Caillet</i></p> <p>2- A multi-physics approach to study gear rattle airborne noise <i>S. Theodossiades, M. de la Cruz</i></p> <p>3- Hammering noise modelling - Nonlinear dynamics of a multi-stage gear train <i>A. Carbonelli, J. Perret-Liaudet, E. Rigaud</i></p> <p>4- Gear noise prediction in automotive transmissions <i>J. Bihl, M. Heider, M. Otto, K. Stahl, T. Kume, M. Kato</i></p>
12:30 - 14:00	LUNCH / POSTER SESSION	

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	Room 3	Room 4
	<b>Session 11: Contact analysis</b> <i>Session chair: Susumu Matsumoto, Waseda University, Japan</i>	<b>Session 12: Gear Materials (I)</b> <i>Session chair: Athanassios Mihailidis, University of Thessaloniki, Greece</i>
8:30 - 10:00	<p>1- Tribodynamics of differential hypoid gears <i>M. Mohammadpour, S. Theodossiades and H. Rahnejat</i></p> <p>2- A comparison and experimental validation of gear contact models for spur and helical gears <i>A.Toso, A. Palermo, A. deJuan, R. Cerda, A. Agazzi, G. Heirman, D. Mundo, W. Desmet</i></p> <p>3- Smooth and non-smooth contact analysis of micro-surfaces of gear teeth <i>L. Liu, C. J. Zhou, Z. H. Wang</i></p>	<p>1- Alternative to Ni bearing carburising steels <i>M. Millot-Meheux, T. Sourmail</i></p> <p>2- A new approach to evaluate materials for open gear <i>M. Octrue, A.Nicolle, R.Genevier</i></p> <p>3- Load bearing capacity of sintered steel gears made of completely prealloy powder for automotive power transmission <i>T. Takemasu, T. Koide, S. Sugimoto, S. Nishida</i></p>
10:00 - 10:30	BREAK	
	<b>Session 15: Manufacturing and design (II)</b> <i>Session chair: Bernd Höhn, Technical University of München, Germany</i>	<b>Session 16: Tooth Surfaces</b> <i>Session chair: Fabrice Ville, INSA Lyon, France</i>
10:30 - 12:30	<p>1- Local simulation of the specific material removal rate for generating gear grinding <i>C. Brecher, F. Klocke, M. Brumm, F. Hübner</i></p> <p>2- Semi-analytical Modelling of Load Distribution of Side-Fit Involute Splines <i>J. Hong, D. Talbot, A. Kahraman</i></p> <p>3- A new geometrically adaptive approach for tooth contact analysis of gear drives <i>F. Sanchez-Marin, A. Fuentes, J. L. Iserte, I. Gonzalez-Perez</i></p> <p>4- A Gear Element in a Wind-turbine Gearbox <i>R. Moreau, B. Mevel</i></p>	<p>1- Quality and surface of gears manufactured by free form milling with standard tools <i>F. Klocke, M. Brumm, J. Staudt</i></p> <p>2- Fatigue performance of cylindrical gearing with DLC coatings <i>Y. Xiao, W. Shi, L. Li, X. Ye</i></p> <p>3- On the simulation of simultaneous fatigue and mild wear during a micropitting gear test <i>J.A. Brandão, J.H.O. Seabra, M.J.D. Castro, R. Martins</i></p> <p>4- Restructuration of Micro-topography of 2-D Tooth Surface Including Static Transmission Errors <i>C. J. Zhou, Z. H. Wang, L. Liu</i></p>
12:30 - 14:00	LUNCH / POSTER SESSION	

# Wednesday 27<sup>th</sup> - afternoon

	Room 1	Room 2
	<b>Session 17: Gear design (III)</b> <i>Session chair: David Dooner, University of Puerto-Rico, USA</i>	<b>Session 18: Gear Dynamics (I)</b> <i>Session chair: Ahmet Kahraman, Ohio State University, USA</i>
14:00 - 16:00	<p>1- Synthesis of the base curves of non-circular gears via the return circle <i>G. Figliolini, H. Stachel, J. Angeles</i></p> <p>2- Integrated design of spiral bevel gear with low sensitivity and high contact ratio <i>T. Huang, R. Yuan, W. Deng, S. Wang</i></p> <p>3- An Approach to Transmission Configuration in Helicopter Preliminary Design <i>B. Han, H.W. Wang, X.H. Yang, Y. Wang</i></p> <p>4- Study on Orthogonal Variable Transmission Ratio Face Gear Drive <i>C. Lin, Z. Q. Cai, Y. Wang, H. Gong</i></p>	<p>1- A torsional dynamic model of multi-stage geared systems submitted to internal and external excitations <i>H. Fakhfakh, J. Bruyère, P. Velex, S. Becquerelle</i></p> <p>2- Study on Load-related Dynamic Behavior of Helical Gears <i>G. Liu, L. Chang, L. Wu</i></p> <p>3- Optimum profile modifications for the minimization of dynamic transmission error <i>V. Y. Ozturk, E. Cigeroglu, H. N. Özgüven</i></p> <p>4- Dynamic analysis of high power gear transmission system in Bucket wheel excavator <i>M. Karray, N. Feki, F. Chaari, M. Haddar</i></p>
16:00 - 16:30	BREAK	
	<b>Session 21: Gear lubrication (II)</b> <i>Session chair: Christophe Chagnenet, ECAM Lyon, France</i>	<b>Session 22: Gear Dynamics (III)</b> <i>Session chair: Philippe Velex, INSA Lyon, France</i>
16:30 - 18:30	<p>1- FZG gearboxes lubricated with different formulations of polyalphaolefin wind turbine gear oils <i>C. Fernandes, R. Martins, J. Seabra, L. Blazquez</i></p> <p>2- Aspects of lubrication at the wave generator -flexspline interface in strain wave gearing units <i>B. Routh, R. Maiti, A. K. Ray</i></p> <p>3- Transient EHL analysis of helical gears <i>H. U. Jamali, K.J. Sharif, H.P. Evans, R.W. Snidle</i></p> <p>4- A discussion on feeding cooler lubricant to the mesh exit region of a helical gear pair based on flow visualization experiments <i>H. Houjoh, S. Matsumura, S. Ohshima</i></p>	<p>1- Dynamic analysis of high-speed face gear rotor systems applying lumped parameters <i>Z. Hu, J. Tang, S. Chen, Z. Sheng</i></p> <p>2- Dynamic stress recovery in gear train simulations using elastic multibody systems <i>D. Schurr, P. Ziegler, P. Eberhard</i></p> <p>3 - Impact of indexing errors on spur gear dynamics <i>M. Inalpolat, M. Handschuh, A. Kahraman</i></p> <p>4- Comparative analysis of the hypoid geared rotor system dynamics applying dissimilar tooth meshing formulations <i>J. Yang, Y. Wang, D. Guo, T.C. Lim</i></p>
19:00 - later	BANQUET AT BOCUSE	



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	Room 3	Room 4
	<b>Session 19: Power losses – Efficiency (I)</b> <i>Session chair: Carlo Gorla, Politecnico di Milano, Italy</i>	<b>Session 20: Durability, fatigue (I)</b> <i>Session chair: Jose Pedrero, UNED, Spain</i>
14:00 - 16:00	<p>1- Analysis of no-load dependent power losses in a planetary gear train by using thermal network method <i>J. Durand de Gevigney, C. Changenet, F. Ville, P. Velex, S. Becquerelle</i></p> <p>2- A Methodology to Predict Power Losses of Planetary Gear Sets <i>D. Talbot, A. Kahraman</i></p> <p>3- Power loss in a planetary gearbox <i>P. Marques, C. Fernandes, R. Martins, J. Seabra</i></p> <p>4- Power analysis of two-dof epicyclic gear transmission and experimental validation <i>C. Chen, J. Chen</i></p>	<p>1- Some theoretical and simulation results on the study of the tooth flank breakage in cylindrical gears <i>D. Ghribi, M. Octrue</i></p> <p>2- Tooth flank fracture – basic principles and calculation model for a subsurface initiated fatigue failure mode of case hardened gears <i>I. Boiadjev, J. Witzig, T. Tobie, K.Stahl</i></p> <p>3- Determination of bending strength of sintered spur gear made of SINT D30 powder metal <i>M. Šori, T. Verlak, S. Glodež</i></p> <p>4- From failure analysis to power transmission design <i>R. Shandro, C. Patte, A. Vadnal</i></p>
16:00 - 16 :30	BREAK	
	<b>Session 23: Power losses – Efficiency (II)</b> <i>Session chair: Jorge Seabra, University of Porto, Portugal</i>	<b>Session 24: Durability, fatigue (II)</b> <i>Session chair: Karsten Stahl, Technical University of Munich, Germany</i>
16:30 - 18:30	<p>1- Study of the influence of the design parameters on the efficiency of spur gears <i>J. I. Pedrero, M. Pleguezuelos, M. B. Sánchez</i></p> <p>2- Experimental spur gear efficiency evaluation including bearing and lubrication losses <i>A.Arana, I. Ulacia, J. Larrañaga, M. Izquierdo, I. Eraña</i></p> <p>3- Effect of Assembly Errors in Back-to-Back Gear Efficiency Testing <i>M. Andersson, M. Sosa, S. Sjöberg, U. Olofsson</i></p> <p>4- Efficiency of a cycloid reducer <i>A. Mihailidis, E. Athanasopoulos, E. Okkas</i></p>	<p>1- Load stresses and residual stresses in the tooth interior <i>R. Weber, J. Rötting, B. Scholtes, M. Bacher-Höchst</i></p> <p>2- Development of a granular cohesive model for Rolling Contact Fatigue analysis: influence of numerical parameters <i>J. P. Noyel, F. Ville, P. Jacquet, A. Gravouil</i></p> <p>3- Crush of wear debris by tooth engagement and tooth flank damage <i>A. Kubo</i></p> <p>4- Root Stresses and bending fatigue strength of thin-rimmed helical gears (helix angle <math>\beta_0=10, 20</math> and <math>30^\circ</math>) <i>K.Miyachika, T. Asano and B.D.I. Daing Mohamad Nafiz</i></p>
19:00 - later	BANQUET AT BOCUSE	

# Thursday 28<sup>th</sup> - morning

	Room 1	Room 2
	<b>Session 25: Gear Design (IV)</b> <i>Session chair: David Talbot, Ohio State University, USA</i>	<b>Session 26: Gear Dynamics (III)</b> <i>Session chair: Datong Qin, Chongqing University, China</i>
8:30 - 10:00	<p>1- High-conforming gearing: Kinematics and geometry <i>S.P. Radzevich</i></p> <p>2- A design guide for very small power transmission gears considering tooth surface strength and manufacturing cost <i>K. Okabe, K. Shoda, Y. Tozaki, M. Nabekura, T. Ohira, T. Yoshimi, A. Umeda</i></p> <p>3- How to get most realistic efficiency calculation for gearboxes? <i>J. Langhart, I. Bae</i></p>	<p>1- A simplified 3D dynamic model of helical and double-helical planetary gears to study the influence of some usual position and geometrical errors <i>M. Chapron, X. Gu, P. Velex, S. Becquerelle</i></p> <p>2- The analysis of dynamic load coefficients of double-helical planetary gear sets <i>S. Wang, C. Zhang, F. Wang</i></p> <p>3- Back to Back Planetary gearbox: Influence of Non-stationary operating conditions <i>A. Hammami, A. Fernandez Del Rincon, F. Viadero Rueda, F. Chaari, N. Feki, M. Haddar</i></p>
10:00 - 10:30	BREAK	
	<b>Session 29: Monitoring, detection of failures (I)</b> <i>Session chair: Murat Inalpolat, University of Massachusetts Lowell, USA</i>	<b>Session 30: Damping</b> <i>Session chair: Pwt Evans, Cardiff University, UK</i>
10:30 - 12:00	<p>1- Gear fault diagnosis by motor current analysis: application to industrial cases <i>F. Combet</i></p> <p>2- Gear test rig for health monitoring and quasi static- and dynamic testing; design, construction and first results <i>F. L. J. van der Linden</i></p> <p>3- Fundamental Study on Detection of Plastic-Gear-Failure Signs (Synchronization of a Nonlinear Oscillator to Mesh Frequency) <i>D. Iba, J. Hongu, H. Hiramatsu, M. Nakamura, T. Iizuka, A. Masuda, I. Moriwaki, A. Sone</i></p>	<p>1 – Theory and design of damping rings in highly loaded gears submitted to propagating wave vibrations on diameter modes. <i>C. Colette</i></p> <p>2 - Effect of Hertzian impact damping on hypoid gear dynamic response <i>Z. Shi, T.C. Lim</i></p> <p>3 - Numerical simulation of damping in EHL line contacts <i>M. Ankouni, A.A. Lubrecht, P. Velex</i></p>
12:00 - 12:30	BEST PAPER AWARD	
12:30 - 14:00	LUNCH / POSTER SESSION	

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	Room 3	Room 4
	<b>Session 27: Precision</b> <i>Session chair: Giorgio Figliolini, University of Cassino &amp; Southern Lazio, Italy</i>	<b>Session 28: Durability, fatigue (III)</b> <i>Session chair: Jean-Christophe Augé, CETIM, France</i>
8:30 - 10:00	<p>1- Study on evaluation system of gear accuracy based on statistical analysis <i>X. Y. Wang, Z. Y. Shi, Z. H. Shu, S. Fu</i></p> <p>2- Robust pre-synchronization in heavy truck transmissions <i>D. Häggström, U. Sellgren, S. Björklund</i></p> <p>3- Identification of radii of tooth root and pitch deviations from whole circumference scanning measurement of cylindrical gears <i>S. Kurokawa, K. Uesugi, T. Teraoka, M. H. Ali, T. Taguchi, Y. Matsukawa</i></p>	<p>1- Online and real-time damage calculation in automotive transmissions - Application to remaining service life estimation <i>S. Foulard, S. Rinderknecht, J. Perret-Liaudet, M. Ichchou</i></p> <p>2- Effects of Case Depth, Face Width and Intergranular Oxidation on Bending Fatigue Strength of Case-Carburized SNC815 and SCM415 Steel Spur Gears <i>K. Miyachika, T. Ikuta, N. Maeta, H. Mada</i></p> <p>3- Determination of maximum loads for drivetrain components in thrusters using flexible multibody-system models <i>B. Schlecht, T. Rosenlöcher, C. Bauer</i></p>
10:00 - 10:30	BREAK	
	<b>Session 31: Experimental results</b> <i>Session chair: Fakher Chaari, ENI Sfax, Tunisia</i>	<b>Session 32: Power Losses – Efficiency (II)</b> <i>Session chair: Avisnash Singh, General Motors, USA</i>
10:30 - 12:00	<p>1- Non-intrusive measurement of gear dynamic response <i>C. Colette, A. Mounetou, A. Talon</i></p> <p>2- Validation of the tooth root load carrying capacity calculation of beveloid gears with parallel axes <i>C. Brecher, M. Brumm, J. Henser</i></p> <p>3- Structural coupling and non-linear effects in the experimental modal analysis of a precision gear test rig <i>A. Palermo, A. Toso, G. H. K. Heirman, R. Cerdá, M. Gulinelli, D. Mundo, W. Desmet</i></p>	<p>1 - Is splash lubrication compatible with efficient gear units for high-speed applications? <i>A. Neurouth, C. Changenet, F. Ville, P. Velex, M. Octrue</i></p> <p>2 - Efficiency and thermal gearbox calculation <i>A.W. Wemekamp, Y. Luo</i></p> <p>3 - The new estimation formula of coefficient of friction in rolling-sliding contact surface under mixed lubrication condition for the power loss reduction of power transmission gears <i>S. Matsumoto, K. Morikawa</i></p>
12:00 - 12:30	BEST PAPER AWARD	
12:30 - 14:00	LUNCH / POSTER SESSION	

## Thursday 28<sup>th</sup> - afternoon

	Room 1	Room 2
	<b>Session 33: Monitoring, detection of failures (II)</b> <i>Session chair: François Combet, DYNAE, France</i>	<b>Session 34: Power Losses – Efficiency (III)</b> <i>Session chair: Ton Lubrecht, INSA Lyon, France</i>
14:00 - 16:00	<p>1 - On-line vibration monitoring and diagnosing of a multi-megawatt wind turbine gearbox <i>C. Zhu, H. Huang, H. Liu, C. Song, F Ma, Z. Liu</i></p> <p>2 - Life Tests' Statistics and its Practical Application <i>S. Kœchlin</i></p> <p>3 - Easy Set-up and In Situ Automatic Gear Diagnostic System Using Laser Beam Reflection (Development of a New Method Enables to Remove Effects of the Rotational Fluctuation Instead of a Rotary Encoder) <i>E. Tanaka, K. Nakajima, Y. Kojima, K. Okabe, H. Takebe, K. Nagamura, K. Ikejo, R. Nemoto</i></p> <p>4 - Rotational feeling evaluation in fishing reel using vibration simulator (Influence of transmission error component of gear pair on tactile sensibility) <i>T. Inoue, S. Kurokawa</i></p>	<p>1 - Analysis of the power losses in geared transmissions – Measurements and CFD calculations based on open source codes <i>F. Concli, C. Gorla</i></p> <p>2 - Preliminary numerical investigations on windage power losses generated by helical gears <i>N. Voeltzel, Y. Marchesse, C. Changenet, F. Ville, P. Velex</i></p> <p>3 - An Experimental Study of Spin Power Losses of Planetary Gear Sets <i>A. Kahraman, D. R. Hilty, A. Singh</i></p> <p>4 - Power losses prediction in poly-v belt transmissions: application to front engine accessory drives. <i>L. Manin, C. Lorenzon, X. Liang</i></p>
16:00	END OF CONFERENCE	

## Best Paper Award

The organising committee is pleased to announce that a prize will be awarded to the best paper published in the proceedings of the 2014 International Gear Conference in Lyon. The Best Paper Award will be presented to the individual(s) judged by the organising committee to have written the best full-length paper.

The prize of 2000 Euros together with a certificate will be given to the author(s) during the Best Paper session on 28th August, 2014 in Lyon.

# INTERNATIONAL GEAR CONFERENCE

26<sup>th</sup>-28<sup>th</sup> August 2014  
Lyon - Villeurbanne

## Poster Session

1 - Advanced material solutions for plastic gears

*J. Cathelin, A. Sedighiamiri*

2 - Cylkro® face gears: Dutch design and Swiss ingenuity cause transmission breakthrough

*A. Benz*

3 - Spur/Helical Gear tooth contact pattern optimization through “Conical Helix Angle Correction” and “Lead Crowning”

*N. Vij, S. Sayyed, S. Singh*

4 - Influence of tooth surface form on mesh excitation waveform obtained by an estimation method from vibration measurement

*T. Nagumo, S. Matsumura, H. Houjoh*

## Exhibitors

Conference sponsors (listed on the final page) will present their latest products/innovations during the 3 days of the International Gear Conference at stands situated in the lobby area.

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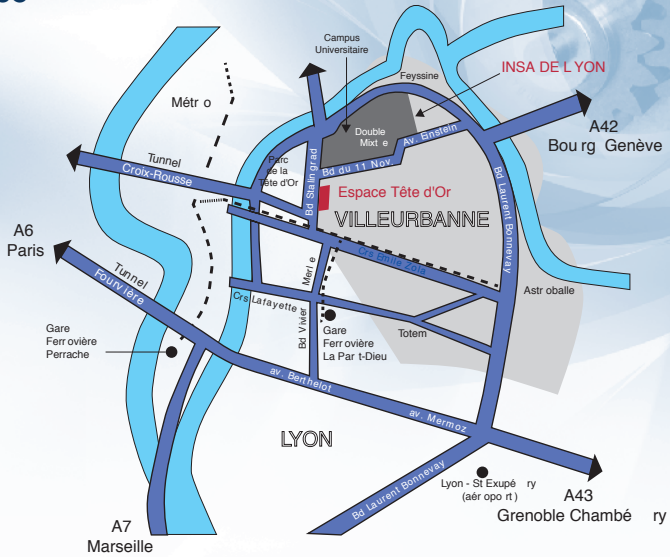
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## Conference website

Further information concerning travel arrangements, accommodation, paper submission etc may be found on the conference website at:

<http://int-gear-conf14.sciencesconf.org>

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