Curriculum vitae English Version

PERSONAL INFORMATION

Mr. Davide Tonazzi

WORK EXPERIENCE

15/07/2008–31/08/2008

Mechanical Engineer

Indivest LT, Latina (Italy)

Stage experience at the INDIVEST-LT on the risk analysis of the extrusion process of aluminium profiles, in order to revise the "Document on valuation of risk" related to D. Lgs 81/08.

01/11/2014–31/10/2015

Research fellow

University of Rome "LA SAPIENZA", Rome (Italy)

Estimation of the contact stiffness by continuous numerical approach and experimental data. The research work has been developed in the framework of the collaboration between the LaMCoS (Contact and Structure Mechanics Laboratory) of the INSA-LYON and the DIMA (Department of Mechanical and Aerospace Engineering) of University of Rome "LA SAPIENZA" for a French National Research Project (ANR-CoMATCo).

Design and development of a newer innovative tribometer. The experimental setup allows to investigate and analyse tribological issues, characterized by low amplitude frictional vibrations (e.g. tactile perception).

01/11/2015–30/06/2016

POST-DOCTORAL position

LaMCoS (Contact and Structure Mechanics Laboratory), INSA of Lyon, Lyon (France)

Numerical Analysis of high loaded oscillating ball-bearings. The research project has been developed in collaboration between the LaMCoS of the INSA-LYON and the SKF Aerospace-FRANCE.

01/07/2016–30/06/2017

Research Fellow

University of Rome "LA SAPIENZA", Rome (Italy)

Studio degli scenari d'instabilità dovuti al contatto strisciante: analisi numerica e sperimentale.

The research project has been conducted in collaboration with SAFRAN LANDING SYSTEM (France).

01/07/2017–present

Research Fellow

University of Rome "LA SAPIENZA", Rome (Italy)

Tactile perception and friction induced vibrations. The project is focused on the tactile perception analyse by the spectral distribution of friction induced vibrations coming from sliding finger tests. The experiments have been carried out by using the newer tribometer developed at the DIMA (University of Rome LA SAPIENZA).

Numerical modelling of the frictional instability for automotive brake disc. The research project has been focused on the modelling of complex automotive brake system. The research project has been conducted in collaboration with BREMBO and the numerical results allowed to design and develop a newer experimental setup devoted to the investigation of the squeal phenomena occurring in automotive disc brakes.

EDUCATION AND TRAINING

03/10/2008

Mechanical Engineering Bachelor's Degree

University of Rome " La Sapienza", Rome

Title of the Thesis: "Analisi dei Rischi del processo di formatura di profili in alluminio all'interno di una azienda metalmeccanica". July 2008- August 2008 | Stage at the INDIVEST-LT – 110/110 cum laude

18/07/2011

Mechanical Engineering Master's Degree

University of Rome "La Sapienza", Rome (Italy)

Title of the Thesis: "Studio numerico e sperimentale del fenomeno di instabilità nel contatto di un freno a disco automobilistico". January 2011-June 2011 | Stage at the Laboratory of Mechanical Vibrations, DIMA, University of Rome. – 110/110 cum laude

04/12/2014

Ph.D. Degree in "Theoretical and applied Mechanics" and Ph.D. Degree in "Génie Mécanique"

University of Rome "LA SAPIENZA", Rome (Italy) and LaMCoS, INSA de Lyon, Ecole Doctorale MEGA, Lyon (France)

Title of the PhD thesis:*"Macroscopic frictional contact scenarios and local contact dynamics: at the origins of "macroscopic stick-slip", mode coupling instabilities and stable continuous sliding".*

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	C1
French	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Organisational / managerial skills

Supervisor for one year of a project dedicated to junior researchers at the University of Rome 'La Sapienza', 2013 entitled "Studio dell'instabilità indotta dall'attrito nei sistemi in contatto strisciante: analisi numerica e Sperimentale".

Reviewer for the following international journals:

- Journal of Automobile Engineering (Sage)
- Advances in Mechanical Engineering (Sage)
- Meccanica (Springer)
- Mechanics and Industry (EDP Sciences)
- Tribolology International (Elsevier)
- Wear (Elsevier)

Job-related skills

I was director and co-director of the several Master and Erasmus students in the field of the Mechanical Vibrations and Frictional Contact Dynamics, both experimentally and numerically, at the University of Rome "LA SAPIENZA".

During the PhD thesis I learned and handled some important useful tools for the study of tribological issues:

- the numerical non-commercial code (PLAST2D) dedicated to study transient non-linear contact phenomena;
- the ANSYS numerical code for the study of the static and dynamic response of frictional systems;
- the MATLAB tool for processing and analysing the experimental and numerical data.
- The instruments and tools for measuring mechanical response of systems: accelerometers, laser vibrometer, hammer and shaker excitation, OROS acquisition system;

I participated to the developing of a newer experimental setup (TRIBOWAVE) and newer experimental techniques for contact issue at the LaMCoS laboratory during my PhD thesis. This setup is dedicated to reproduce and investigate the system response and the contact behaviour of two bodies in frictional sliding.

Good knowledge of software such as ANSYS, MATLAB, SOLIDEDGE, SOLIDWORKS and PLAST2D.

ADDITIONAL INFORMATION

Publications- International Journals

1. Tonazzi, Davide; Massi, Francesco; Culla, Antonio; Baillet, Laurent; Fregolent, Annalisa; Berthier, Yves; *"Instability scenarios between elastic media under frictional contact"*,Mechanical Systems and Signal Processing",40,2,754-766, 2013.
2. Tonazzi, Davide; Massi, Francesco; Baillet, Laurent; Culla, Antonio; Di Bartolomeo, Mariano; Berthier, Yves; "Experimental and numerical analysis of frictional contact scenarios: from macro stick–slip to continuous sliding", Meccanica,50,3,649-664,2015.
3. Tonazzi, D; Komba, E Houara; Massi, F; Le Jeune, G; Coudert, JB; Maheo, Y; Berthier, Y; "Numerical analysis of contact stress and strain distributions for greased and ungreased high loaded oscillating bearings",Wear,376,,1164-1175,2017.
4. Ghezzi, Ilaria; Komba, Eymard W Houara; Tonazzi, Davide; Bouscharain, Nathalie; Le Jeune, Gwenole; Coudert, Jean-Baptiste; Massi, Francesco; "Damage evolution and contact surfaces analysis of high-loaded oscillating hybrid bearings",Wear,406,,1-12,2018.
5. Tonazzi, Davide; Massi, Francesco; Baillet, Laurent; Brunetti, Jacopo; Berthier, Yves; "Interaction between contact behaviour and vibrational response for dry contact system",Mechanical Systems and Signal Processing,110,,110-121,2018.
6. Di Bartolomeo, Mariano; Morelli, Flavio; Tonazzi, Davide; Massi, Francesco; Berthier, Yves; "Investigation of the role of contact-induced vibrations in tactile discrimination of textures", Mechanics & Industry,18,4,404, 2017.

Publications- International Conferences

1. Culla A., Tonazzi D.,Massi F.,Fregolent A., "Response surface model of a brake system to optimize structural modifications for squeal noise suppression ", INTERNATIONAL CONGRESS ON NOISE INTERNOISE, New York, 2012.
2. Tonazzi D., Massi F., Culla A., Fregolent A., Berthier Y, "Role of damping on contact instability scenarios", World Tribology Congress, Turin, 2013.
3. Massi F., Di Bartolomeo M., Tonazzi D., Berthier Y., "On the origins of friction induced vibrations and contact instabilities" , EUROBRAKE, Dresden, Germany, 17-19 June 2013.
4. Tonazzi D., Massi F., Baillet L., Fregolent A., Berthier Y., "Global dynamics and local contact behaviour during frictional instabilities: numerical modeling of dry friction and experimental validation", ACT, Marrakesh, Marocco, 2014.
5. Tonazzi D., Massi F., Baillet L., Di Bartolomeo M., Culla A., Fregolent A., Berthier Y., "At the origin of contact instabilities: from macro stick-slip to mode coupling, up to stable sliding state", EUROBRAKE, Lille, France, 2014.
6. Tonazzi D., Massi F., Baillet L., Culla A., Fregolent A., Regis E., Lambert M., "Experimental and numerical characterization of system response under dry frictional contact", ISMA- International Conference on Noise and Vibration Engineering, Leuven, Belgium, 2014.
7. F. Massi, D. Tonazzi, M. Di Bartolomeo, L. Baillet, "On the friction induced vibrations and macroscopic frictional scenarios" , SAE Brake Colloquium & Exhibition - 32nd Annual, Burlingame(San Francisco), California, USA, October 5-8, 2014.
8. F. Massi, D. Tonazzi, M. Di Bartolomeo, L. Baillet, Y. Berthier, "Coupling between system and contact dynamics at the origin of frictional contact scenarios and instability maps", Friction Forum, Berlin, Germany, 22-23 June, 2015.
9. F. Massi, M. Di Bartolomeo, D. Tonazzi, L. Baillet, Y. Berthier, "Frictional Scenarios and Induced Vibrations", EUROBRAKE, Dresden, Germany, 4-6 May, 2015.
10. Tonazzi Davide, Massi Francesco, Berthier Yves, "Estimation of surface contact stiffness using experimental dynamic tests and continuous numerical approach", EUROBRAKE, Milan, Italy,13-15 June 2016.
11. Massi Francesco, Tonazzi Davide, Berthier Yves,"Continuous approach for the experimental estimation of surface contact stiffness", 71st STLE Annual Meeting & Exhibition, Las Vegas, United States, 15-19 May 2016.

12. Tonazzi D., Massi F., Berthier Y., Dufrenoy P., “Estimation of contact stiffness for frictional composite materials”, EUROBRAKE, Dresden, Germany, 2-4 May 2017.

13. D.Tonazzi, E. Houara Komba, F. Massi, G. Le Jeune, J.B. Coudert, Y. Maheo, Y. Berthier, "Numerical analysis of contact stress and strain distributions for greased and ungreased high loaded oscillating bearings", Wear of Materials, California, USA, 26-30 March 2017.

14. Tonazzi D., Salipante M.,Massi F., Berthier Y., “Estimation of normal contact stiffness in sticking and sliding condtions for rough flat surface”, EUROBRAKE, The Hague, Netherlands, 22-24 May 2018.

15. Tonazzi D., Massi F., Baillet L., Salipante M., Berthier Y., “Estimation of normal contact stiffness for different contact pairs: experiments and numerical approach ”, ISMA- International Conference on Noise and Vibration Engineering, Leuven, Belgium, 2018.