

PROGRAMME

# LAM-17

Lyon, 26-30 August 2019

## 17<sup>th</sup> International Conference on Liquid and Amorphous Metals





## Welcome to the 17<sup>th</sup> International Conference on Liquid and Amorphous Metals!

The 17th International Conference on Liquids and Amorphous Metals in Lyon, August 26-30, 2019, continues a series of meetings held every three years, most recently in Beijing, China (2013), and in Bonn, Germany (2016).

In 2019, LAM-17 is hosted jointly by the Institut Lumière Matière (ILM), University of Lyon 1, INSA and CNRS in Lyon.

The aim of LAM conferences is to discuss new advances and future directions in the field of liquid and amorphous metals, by employing theoretical and simulations studies, laboratory techniques and large scale facilities such as synchrotrons and free electron lasers. The 17<sup>th</sup> edition will also include presentations on non-metallic materials, such as molecular glasses, polymers and colloids in order to encourage the interdisciplinary among different disordered materials fields.

The scientific program of LAM-17 consists of plenary sessions, parallel oral sessions with invited keynotes and contributed presentations, as well as poster sessions. Presenters were invited or selected based on their abstract submissions by the International Advisory and Program Committees and the local organizing committee. The two best posters presented by students will be awarded with the possibility to perform a short term visit in a partner laboratory.

The welcome cocktail on Monday, August 26<sup>th</sup>, at Villemanzuy in the heart of the Lyon, is a first opportunity for conference participants to know each other and to network.

A boat tour of Lyon has been planned on Wednesday 28<sup>th</sup> while the conference dinner takes place on Thursday, August 29<sup>th</sup>, in the beautiful Circus Imagine at Vaulx-en-Velin. The dinner will be followed by a typical French spectacle of cabaret and circus. Both events will provide an additional important opportunity for participants for informal discussions and exchanges.

We hope you enjoy LAM-17!

Valentina Giordano and Beatrice Ruta  
*University Lyon 1 and CNRS*

Anne Tanguy  
*LAMCOS, INSA Lyon*

Conference Chair and Co-Chairs  
Email: [lam-17@sciencesconf.org](mailto:lam-17@sciencesconf.org)  
Web site: <https://lam-17.sciencesconf.org/>

## Conference Sponsors



## Committees

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### International Programm Committee

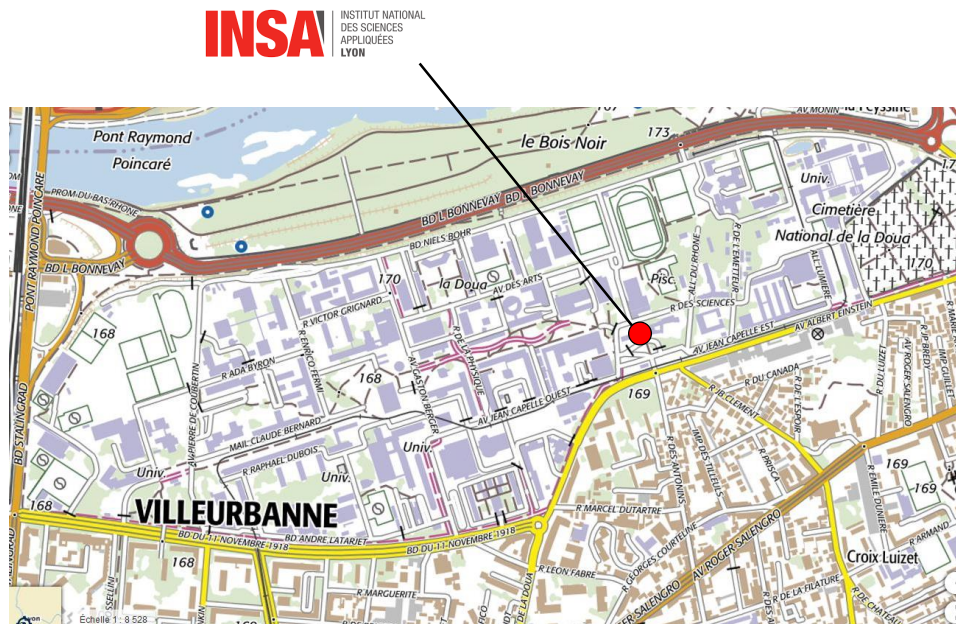
1. T. Bryk Institute for Condensed Matter Physics, Natl. Acad. of Sci. of Ukraine
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### Local Organizing Committee

- |                        |                              |                           |                  |
|------------------------|------------------------------|---------------------------|------------------|
| 1. Béatrice Ruta       | ILM, Univ Lyon 1 and CNRS    | 14. Gata Joseph Ayemi     | INSA-Lyon        |
| 2. Valentina Giordano  | ILM, Univ Lyon 1 and CNRS    | 15. Guojian Lyu           | INSA-Lyon        |
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| 8. Damien Fabregue     | MATEIS, INSA-Lyon,           | 21. Paul Desmarchelier    | INSA-Lyon        |
| 9. Valéry Botton       | LMFA, INSA-Lyon              | 22. Haoming Luo           | INSA-Lyon        |
| 10. Remi Daudin        | SIMAP, CNRS and Grenoble INP | 23. Mohammad Hadi         | ILM, Univ Lyon 1 |
| 11. Noel Jakse         | SIMAP, Grenoble INP          | 24. Khiscia Utria         | INSA-Lyon        |
| 12. Michela Brunelli   | ESRF, Grenoble               |                           |                  |
| 13. Gavin Vaughan      | ESRF, Grenoble               |                           |                  |

## Practical Information

### 1. Venue:



The Conference is held at the INSA Lyon, 20, avenue Albert Einstein - 69621 Villeurbanne CEDEX

=> [Interactive web map](#)

=> MAP [INSA Lyon](#) (download)

### Access by train or by plane

From Lyon-St Exupéry airport:

- Airport ↔ Lyon in less than 30 minutes : <http://www.rhonexpress.fr/>

From Part-Dieu train station:

- Take the T1 Tramway towards "IUT Feyssine" and get off at "INSA-Einstein".
- or take the T4 Tramway towards "La Doua Gaston Berger" and get off at "La Doua Gaston Berger"

From Perrache train station:

- Take the Line A metro towards "Laurent Bonnevey" and get off at "Charpennes", then take :
  - the T1 Tramway towards "IUT Feyssine" and get off at "INSA-Einstein"
  - or the T4 Tramway towards "La Doua Gaston Berger" and get off at "La Doua Gaston Berger"

**Access from the highway** (GPS: Latitude : 45.78264 | Longitude : 4.878073)

- Via "Rocade Est" ring road: exit 1B then "Croix Luizet", follow "la Doua", then "Domaine Scientifique de la Doua".
- Via the Boulevard Laurent BONNEVAY: exit 6 "Porte de Croix Luizet", then follow direction "Campus de la Doua" ([road access map](#)).

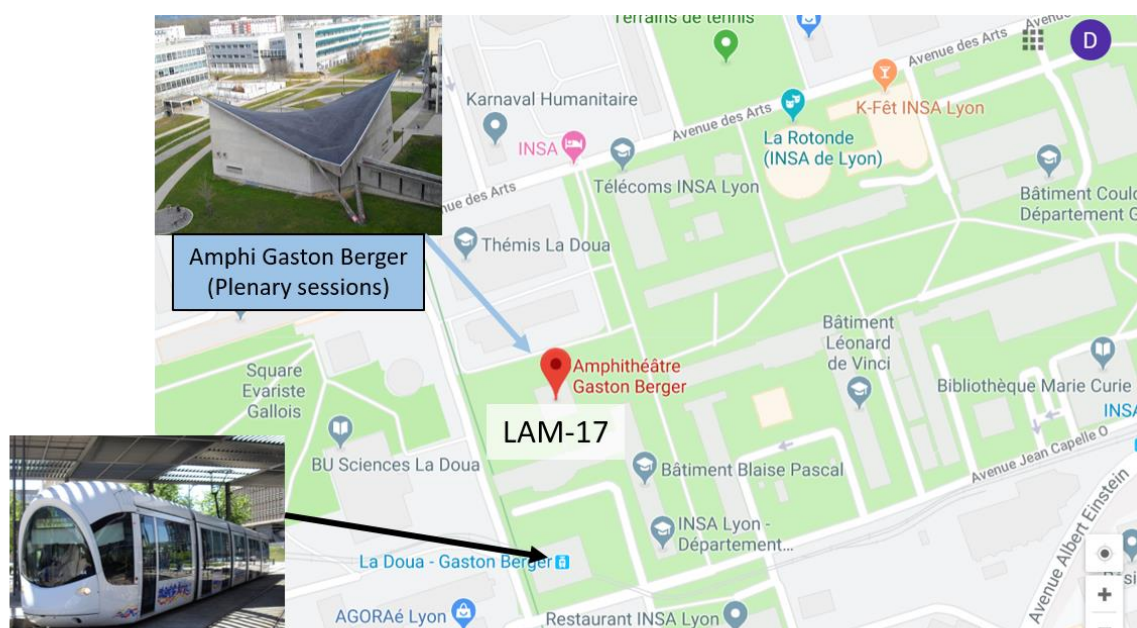
All the information to travel in public transports in Lyon on: [www.tcl.fr](http://www.tcl.fr)



## 2. The Rooms:

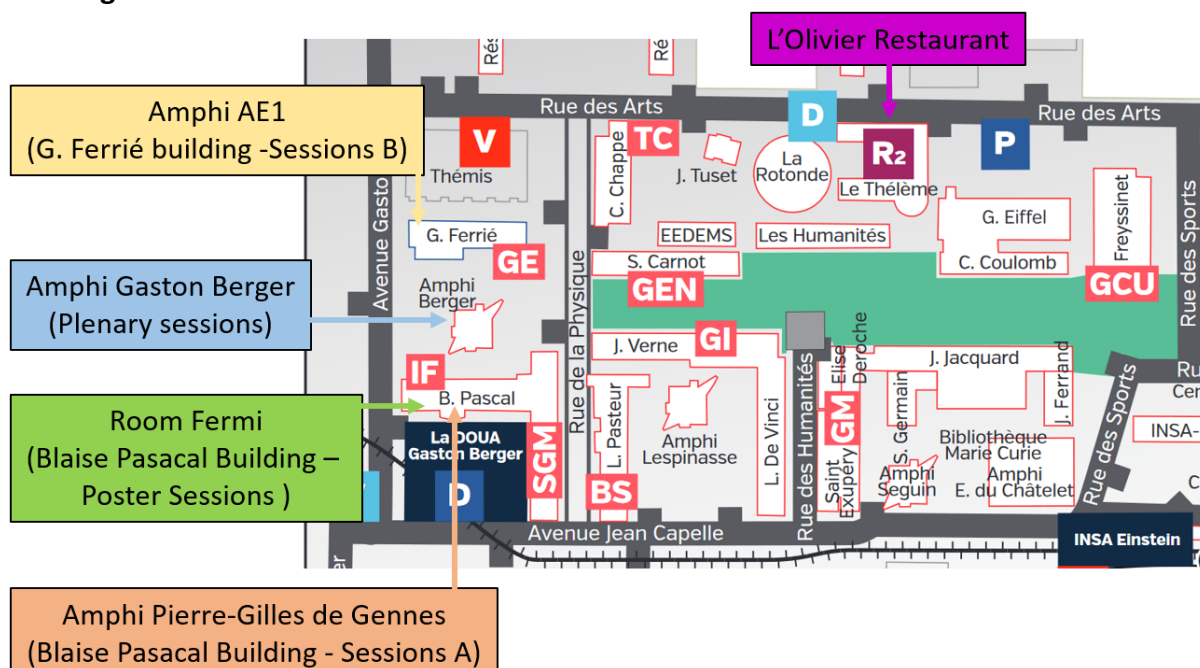
The plenary talks will take place in the Auditorium Gaston Berger, while the parallel sessions will be in the Pierre-Gilles de Gennes auditorium (Blaise Pascal Building) and AE1 auditorium (G. Ferrié Building) which are located nearby. Coffee-breaks will be served in the Blaise Pascal Building near the Auditoria, while lunches will in the campus restaurant L'Olivier located at 5 minutes' walk from the conference rooms.

### Map overview



Tram Stop – La Doua – Gaston Berger

### Buildings and Rooms overview



### 3. Registration:

All LAM-17 attendees already registered are invited to complete the check-in at the registration desk, where the conference material will be given. On-site registrations during the Conference will be at the late rates listed below.

Onsite payments are possible by credit card or cash:

800€ (regular)

600€ (student)

90€ (accompanying person)

#### Registration Desk

The Registration Desk will be located in the Building Blaise Pascal - ground floor. It will be open during the conference hours.

#### Badge Policy

When you check in at the Registration Desk, you will receive a personalized name badge. All attendees will be required to wear their name badges to enter the Conference area.

#### Internet Access

Wireless access will be available in the Conference area

### 4. Oral and Poster presentation

#### Oral presentation

All the oral presentations will be given in English. Speakers have been allocated the following time slots:

Plenary Speakers	40 minutes for presentation and 5 minutes for discussions
Keynote Speakers	25 minutes for presentation and 5 minutes for discussions
Contributed Talks	15 minutes for presentation and 5 minutes for discussions

All authors presenting a talk are kindly requested to show up at the beginning of their corresponding oral session.

#### Poster presentation

The poster size must not exceed 120 X 70 cm; dedicated tape to fix the posters will be given by the staff. The poster session will be located in the Fermi room, in front of the Auditorium Pierre-Gilles de Gennes in the Blaise Pascal Building. Although the poster session is scheduled on Tuesday 27<sup>th</sup>, all posters will be available also during all the subsequent coffee breaks, and can be removed the last day of the conference. The two best student's posters will be awarded with a short term visit in a partner laboratory. Prizes will be awarded during the conference dinner.



## 5. Conference Publications

Selected papers presented at the conference will be published in the peer-reviewed special issue on "*Liquids and Amorphous Metals*" of Journal of Physics: Condensed Matter.

Special issue articles are subject to the same review process and high standard as regular Journal of Physics: Condensed Matter (JPCM) articles and should be submitted in the same way. Please read the scope page for more information before submitting:

<https://iopscience.iop.org/journal/0953-8984/page/liquidandamorphousmetals>

The submission window will be open until 31 October 2019. JPCM is able to publish special issues incrementally. If you submit early in the period, your article will not be delayed waiting for other papers in the collection. If you are not able to meet the deadline, please let us know.

## 6. Social Events

### Welcome Cocktail:

On monday 26<sup>th</sup> of August 7pm, we welcome you at the conference with a cocktail at the heart of the city between the Rhône and Saône, on the slopes of the Croix-Rousse hill, at the Villemanzu Residence.

You will enjoy a stunning view of the Rhone, the great Lyon and the plain of Dauphiné, drinking a good glass of wine. From this location you will be able to embark for a stroll in the Vieux-Lyon, discover the charming streets of Croix-Rousse, mix with the friendly local population, walk down the slopes and have your first feeling of Lyon.

Address: Maison Villemanzu, 21, montée Saint Sébastien, 69001 Lyon.

Website: <http://www.belambra-villemanzu.fr/>



### Boat Tour: Visit of Lyon

On wednesday 28<sup>th</sup> of August at 4pm, enjoy a guided tour of Lyon, calmly sailing the Saone on a boat. The cruise will last 2 hours and bring you from the confluence of Saone and Rhone all along the Saone up to the wild Ile Barbe, at the gateway to the city. You will enjoy the view

of the eldest quarters of Lyon, admire the Basilica of Notre-Dame de Fourvière, and learn about Lyon's history and architecture.

The cruise will bring you back to the Confluence area, where you will be able to enjoy the shops, the little restaurants and pubs in front of the harbour, or just go back to the city centre and stroll there.



#### Conference dinner:

On Thursday 29<sup>th</sup> August at 6:30 pm, the conference dinner will take place at [IMAGINE CIRCUS](http://www.cirqueimagine.com). Unique in France, this Circus makes up a show where the traditional arts of French Cabaret mix with the Circus arts in a cosy atmosphere.

You will enjoy a surprising evening full of events, from the aperitif accompanied by some magic show, through the dinner in the baroc tent, to the Cabaret-Circus Show after dinner, with artists exhibiting just a few meters from your table. And if you are not tired, disco dance will be open until 1am.



## Programme at glance

Monday 26 <sup>th</sup> August		Tuesday 27 <sup>th</sup> August		Wednesday 28 <sup>th</sup> August		Thursday 29 <sup>th</sup> August		Friday 30 <sup>th</sup> August	
<div>Blaise Pascal (Hall)</div> <div>Amphi. Gaston Berger</div> <div>Amphi. Pierre-Gilles de Gennes (Blaise Pascal building)</div> <div>Amphi. AE1 (G. Ferrié building)</div> <div>Fermi Room (Blaise Pascal building)</div> <div>L'Olivier Restaurant</div>	9h00 9h45	Plenary Wang Wei-Hua	9h00 9h45	Plenary Jörg Löffler	9h00 9h45	Plenary Alfred Baron	9h00 9h45	Plenary Fernando Lund	
	9h50	Sess. A2 R. Bruening	Sess. B2 X. Wang	Sess. A6 F. Zontone	Sess. B6 S. Gravier	Sess. A9 J.F. Wax	Sess. B9 B. Adam	Sess. A13 T. Bryk	Sess. B13 S.S. Riegler
	10h10	C. Yuan	F. Caporaletti	B. Sarac	B. Bochtler	S. Hosokawa	L. Ruschel	F. Demmel	A. F. Garcia
	10h30	M. Bokova	N. Amimi	Q. Cao	E. Guérin	H. Luo	D. Holland-Moritz	M. Vasin	M. Kageshima
	10h50	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
		Sess. A3 K. Nishio	Sess. B3 R. Busch	Sess. A7 A. Lu Anh Khoa	Sess. B7 S. Koch	Sess. A10 T. Usuki	Sess. B10 E. Babic	Sess. A14 Y. Kajihara	
	11h20			11h20		11h20		11h20	
	11h40	K. Khishchenko	M. Stiehler	O. Gross	N. Neuber	L. Kamaeva	I. Balyakin	N. Dubinin	
	12h00	G. Makov	B. Isenmann	E. S. Osman	B. Lavis	A. Sobolev	A. Kuball	Conclusions	
	12h20	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch	
		Sess. A4 Invited R.L. Maas	Sess. B4 Invited R. Torchio	Sess. A8 Invited I. Gallino	Sess. B8 Invited Y. Fomin	Sess. A11 Invited B. Riechers	Sess. B11 Invited Q. Zeng		
	14h30	P. Derlet	L.E. Gonzales	A. Kao	J.G. Gasser	G. Lohöfer	S. Ohmura		
	14h50	C. Bernard	L.A. Haozhe	M. Frey	D. Fabregue	Y. Chushkin	X. Wang		
	15h10	G. Kermouche	S. Menshikova	15h00		S. Lee	B. Gelchinski		
	15h30	Coffee Break	Coffee Break			Coffee Break	Coffee Break		
	16h10	D. M. Louzguine-Luzgin	E. Pineda			Sess. A12 Invited K. Martens	Sess. B12 Invited F. Yan		
	16h30	F. Spieckermann	L. Guojian			16h00			
	16h50	E. Kirova	B. Shang			16h30	D. Vandembroucq		
	17h10	V. Sidorov	E. Yahel			16h50	T. Albaret		
<div>Welcome Cocktail (Villemanzay – Downtown)</div>	18h30 21h30					18h30			

## Sessions List

### Monday 26<sup>th</sup> August

- Sess. A1: Crystallization and glass transition I
- Sess. B1: Stress Relaxation and Rheological behaviour

### Tuesday 27<sup>th</sup>

- Sess. A2: Metallic glass formers characterization I
- Sess. B2: Diffusion and relaxation processes in liquids and glasses I
- Sess. A3: Local and medium range order in liquids and amorphous I
- Sess. B3: Dynamical and Phase Transitions in the liquid state I
- Sess. A4: Plasticity and mechanical behaviour I
- Sess. B4: Extreme conditions and metastability I
- Sess. A5: Phase transitions and Phase Diagram
- Sess. B5: Local and medium range order in liquids and amorphous II

### Wednesday 28<sup>th</sup>

- Sess. A6: Thin Materials
- Sess. B6: Functional Materials I – (funded by Institut Carnot@Lyon)
- Sess. A7: Local and medium range order in liquids and amorphous III
- Sess. B7: Functional Materials II – (funded by Institut Carnot@Lyon)
- Sess. A8: Crystallization and glass transition II
- Sess. B8: Functional Materials III – (funded by Institut Carnot@Lyon)

### Thursday 29<sup>th</sup>

- Sess. A9: Thermal, transport properties and dynamics I
- Sess. B9: Metallic glass formers characterization II
- Sess. A10: Local and medium range order in liquids and amorphous IV
- Sess. B10: Thermo-Physical characterization of metallic alloys
- Sess. A11: Novel experimental approaches
- Sess. B11: Extreme conditions and metastability II
- Sess. A12: Plasticity and mechanical behaviour II
- Sess. B12: Diffusion and relaxation processes in liquids and glasses II

### Friday 30<sup>th</sup>

- Sess. A13: Thermal, transport properties and dynamics II
- Sess. B13: Plasticity and mechanical behaviour III
- Sess. A14: Dynamical and Phase Transitions in the liquid state II

# LAM-17 Conference

## Full program

Day 1 - Monday 26<sup>th</sup> August 2019

<b>14:30 - 15:00 Coffee break and Registration in the Blaise Pascal Hall</b>			
<b>15:00 – 15:20</b>	<b>Welcome/Introduction</b>	<i>Organisers</i>	
15:20 – 16:05	<b>Plenary Talk:</b> Auditorium Gaston Berger Structural origin of slow glassy dynamics and glass-forming ability	<b>Hajime Tanaka</b> <i>Tokyo University, Japan</i>	<b>PL1</b>
<b>16:10 – 17:30</b>	<b>Session A1: Auditorium Pierre-Gilles de Gennes</b> <i>Crystallization and glass transition I</i>	Chair: D. Fabregue	
16:10 – 16:30	Crystal nucleation- and crystal growth-controlled type bulk metallic glasses and the nature of incubation period before crystallization	<b>Dmitri V Louzguine-Luzgin</b> <i>Tohoku University, Japan</i>	<b>O1</b>
16:30 – 16:50	Reduced glass transition in amorphous Cu <sub>64</sub> Zr <sub>36</sub> /Cu <sub>64</sub> Hf <sub>36</sub> metallic nanolayers	<b>Florian Spieckermann</b> <i>Montanuniversität Leoben, Austria</i>	<b>O2</b>
16:50 – 17:10	Morphological aspect of crystal nucleation and glass transition in supercooled metallic melt	<b>Elena Kirova</b> <i>National Research University, Russia</i>	<b>O3</b>
17:10 – 17:30	Peculiarities in crystallization of Al- and Co-based amorphous alloys.	<b>Valeriy Sidorov</b> <i>Ural State Pedagogical University (USPU), Russia</i>	<b>O4</b>
<b>16:10 – 17:30</b>	<b>Session B1: Auditorium AE1</b> <i>Stress Relaxation and Rheological behaviour</i>	Chair: I. Gallino	
16:10 – 16:30	Determination of the slow dynamics of metallic glasses by stress relaxation	<b>Eloi Pineda</b> <i>Universitat Politècnica de Catalunya (UPC), Spain</i>	<b>O5</b>
16:30 – 16:50	Study of dynamic mechanical behavior of Cu <sub>64</sub> Zr <sub>36</sub> metallic glass investigated by atomistic simulations	<b>Guojian Lyu</b> <i>MATEIS INSA Lyon, France</i>	<b>O6</b>
16:50 – 17:10	Local viscoelastic spectrum in a supercooled liquid near the glass transition by molecular dynamics	<b>Baoshuang Shang</b> <i>Beijing Computational Science Research Center, China &amp; LiPhy, France</i>	<b>O7</b>
17:10 – 17:30	Liquid Ga-In alloys: Thermo-physical measurements, liquid transformations and pressure dependent phase diagram	<b>Eyal Yahel</b> <i>Ben Gurion University, Israel</i>	<b>O8</b>
<b>18:30 – 21:30 Welcome Cocktail (Villemanzy - Downtown)</b>			



# LAM-17 Conference

## Day 2 - Tuesday 27<sup>th</sup> August 2019

09:00 – 09:45	<b>Plenary Talk:</b> Auditorium Gaston Berger <i>Slow Dynamics and Ultrastability of Metallic glasses</i>	<b>Wei-Hua Wang</b> <i>Chinese Academy of Science, Beijing</i>	<b>PL2</b>
09:50 – 10:50	<b>Session A2: Auditorium Pierre-Gilles de Gennes</b> <i>Metallic glass formers characterization I</i>	Chair: N. Jakse	
09:50 – 10:10	Molecular Dynamics Simulation of Low-Energy Deposition of Amorphous Nickel Phosphide	<b>Ralf Brüning</b> <i>Mount Allison University, Canada</i>	<b>O9</b>
10:10 – 10:30	Impact of hybridization on metallic-glass formation and design	<b>Chenchen Yuan</b> <i>Southeast University, Nanjing, China</i>	<b>O10</b>
10:30 – 10:50	Relationships between glass structure and properties in single and mixed thallium and/or silver thiogermanate glasses	<b>Maria Bokova</b> <i>Univ. du Littoral Côte d'Opale, France</i>	<b>O11</b>
09:50 – 10:50	<b>Session B2: Auditorium AE1</b> <i>Diffusion and relaxation processes in liquids and glasses I</i>	Chair: F. Yang	
09:50 – 10:10	Structural signature of beta-relaxation in La-based metallic glasses	<b>Xiaodong Wang</b> <i>Zhejiang University, China</i>	<b>O12</b>
10:10 – 10:30	A microscopic look at the Johari-Goldstein relaxation in a hydrogen-bonded liquid.	<b>Federico Caporaletti</b> <i>University of Trento, Italy</i>	<b>O13</b>
10:30 – 10:50	Microscopic and macroscopic characterization of the relaxation processes in metallic glasses	<b>Narges Amini</b> <i>Deutsches Zentrum für Luft- und Raumfahrt, Köln, Germany</i>	<b>O14</b>
10:50 – 11:20	<b>Coffee break - Blaise Pascal Hall</b>		
11:20 – 12:20	<b>Session A3: Auditorium Pierre-Gilles de Gennes</b> <i>Local and medium range order in liquids and amorphous I</i>	Chair: M. Brunelli	
11:20 – 11:40	Entropy-driven dicosahedral short-range order in simple liquids and glasses	<b>Kengo Nishio</b> <i>Nat. Inst. of Advanced Industrial Science &amp; Technology, Japan</i>	<b>O15</b>
11:40 – 12:00	Thermodynamic properties and freezing of metastable liquid niobium at negative pressures	<b>Konstantin Khishchenko</b> <i>Joint Institute for High Temperatures, Russia</i>	<b>O80</b>
12:00 – 12:20	Short range order in liquids? quasi-crystalline model	<b>Guy Makov</b> <i>Ben Gurion University, Israël</i>	<b>O17</b>

<b>11:20 – 12:20 Session B3: Auditorium AE1</b> <i>Dynamical and Phase Transitions in the liquid state I</i>		Chair: H. Tanaka	
11:20 – 11:40	Liquid-liquid transitions in bulk metallic glass forming liquids	<b>Ralf Busch</b> Saarland University, Germany	<b>O18</b>
11:40 – 12:00	Caught in the act: The glass transition in undercooled metallic liquids observed in-situ by synchrotron X-ray diffraction	<b>Martin Stiehler</b> Cranfield University, United Kingdom	<b>O19</b>
12:00 – 12:20	Viscosity of supercooled water under pressure and two-state interpretation of water anomalies	<b>Bruno Isenmann</b> ILM, Université Lyon 1, France	<b>O20</b>
<b>12:20 – 14:00 Lunch at L'Olivier</b>			
<b>14:00 – 15:30 Session A4: Auditorium Pierre-Gilles de Gennes</b> <i>Plasticity and mechanical behaviour I</i>		Chair: K. Martens	
14:00 – 14:30	<b>Invited Keynote:</b> Deformation-induced structural dynamics in metallic glasses	<b>Robert L. Maas</b> University of Illinois, USA	<b>KL1</b>
14:30 – 14:50	Collective plasticity in a model binary glass spanning five orders of magnitude strain rate.	<b>Peter Derlet</b> Paul Scherrer Institute, Switzerland	<b>O21</b>
14:50 – 15:10	Influence of the presence of crystalline defects in bulk metallic glasses on cracking and plasticity	<b>Cédric Bernard</b> IRDL, Université de Bretagne Sud, France	<b>O22</b>
15:10 – 15:30	A new long-term nanoindentation relaxation method to characterize the time-dependent behavior of thin ZrNi metallic glass films	<b>Guillaume Kermouche</b> LGF, Ecole des Mines de St Etienne, France	<b>O23</b>
<b>14:00 – 15:30 Session B4: Auditorium AE1</b> <i>Extreme conditions and metastability I</i>		Chair: Q. Zeng	
14:00 – 14:30	<b>Invited Keynote:</b> Liquid 3d metals under extreme conditions	<b>Raffaella Torchio</b> ESRF, Grenoble, France	<b>KL2</b>
14:30 – 14:50	Ab initio study of the properties of liquid uranium for temperatures up to 2050 K.	<b>Luis E. Gonzalez</b> Universidad de Valladolid, Spain	<b>O24</b>
14:50 – 15:10	Metallic glasses and melt under high pressure conditions	<b>Arthur Haozhe Liu</b> Center for High Pressure Science & Technology Advanced Research, China	<b>O25</b>
15:10 – 15:30	Structure of the glass-forming Al-Y-Ni alloys formed from liquid upon high pressure solidification	<b>Svetlana Menshikova</b> Federal State Budgetary Institution of Science, Russia	<b>O26</b>
<b>15:30 – 16:00 Coffee break - Blaise Pascal Hall</b>			

<b>16:00 – 17:00 Session A5: Auditorium Pierre-Gilles de Gennes</b> <i>Phase transitions and Phase Diagram</i>		Chair: A. Tanguy
16:00 – 16:20	The singularity of four-point correlation functions at the phase transition point of copper/nickel melt	<b>Dmitrii Fleita</b> <b>O27</b> <i>Joint Institute for High Temperatures of the RAS, Russia</i>
16:20 – 16:40	Thermodynamic properties of heavy alkali liquid metals measured by picoseconds acoustics	<b>Simon Ayrinhac</b> <b>O28</b> <i>IMPMC, Sorbonne Université, France</i>
16:40 – 17:00	Traveling waves in the field approach to fast phase transformations: a case of melt freezing to glassy states	<b>Peter Galenko</b> <b>O29</b> <i>Friedrich-Schiller-University Jena, Germany</i>
<b>16:00 – 17:00 Session B5: Auditorium AE1</b> <i>Local and medium range order in liquids and amorphous II</i>		Chair: F. Yuri
16:00 – 16:20	Alloy order revisited: Calculation of the radii and order parameter of the layers for binary alloys with spherical symmetry	<b>Benoit Grosdidier</b> <b>O30</b> <i>LCP-A2MC, Université de Lorraine, France.</i>
16:20 – 16:40	The three-dimensional fractals of stars with icosahedral symmetry	<b>Alexander Polyakov</b> <b>O32</b> <i>South Ural State University, Russia</i>
<b>17:00 – 19:00 Poster Session (Blaise Pascal building)</b>		

## LAM-17 Conference

Day 3 - Wednesday 28<sup>th</sup> August 2019

09:00 – 09:45	<b>Plenary Talk:</b> Auditorium Gaston Berger <i>Metastable phase identification and discovery of novel phase-transition pathways via ultrafast calorimetry</i>	<b>Jörg Löffler</b> <b>PL3</b> <i>ETH Zurich, Switzerland</i>
<b>09:50 – 10:50 Session A6: Auditorium Pierre-Gilles de Gennes</b> <i>Thin Materials</i>		Chair: R. Daudin
09:50 – 10:10	Structural relaxations in metallic glass membranes stimulated by in-situ hydrogenation	<b>Federico Zontone</b> <b>O33</b> <i>ESRF, Grenoble, France</i>
10:10 – 10:30	Hydrogen storage in Pd-based metallic glass nanofilms via electrochemical methods	<b>Baran Sarac</b> <b>O34</b> <i>Erich Schmid Institute, Austria</i>
10:30 – 10:50	Mechanical behaviors of metallic glassy thin films	<b>Qingping Cao</b> <b>O35</b> <i>Zhejiang University, China</i>

**09:50 – 10:50 Session B6: Auditorium AE1**

*Functional Materials I - funded by Institut Carnot Ingénierie@Lyon*

Chair: M. Brunelli

09:50 – 10:10 Vulkam presentation

**Sébastien Gravier** **O36**  
*Vulkam Inc. Amorphous metal  
micro casting, Grenoble,  
France*

10:10 – 10:30 The influence of minor additions of sulfur in Zr- and Cu-based bulk metallic glass forming liquids

**Benedikt Bochtler** **O37**  
*Saarland University, Germany*

10:30 – 10:50 Study of surface crystallization during the elaboration of a ZrCoAl bulk metallic glass.

**Eliott Guérin** **O38**  
*SIMaP, CNRS, Univ. Gre.  
Alpes, France*

**10:50 – 11:20 Coffee break - Blaise Pascal Hall**

**11:20 – 12:20 Session A7: Auditorium Pierre-Gilles de Gennes**

*Local and medium range order in liquids and amorphous III*

Chair: D. Hallon-Moritz

11:20 – 11:40 Short- and medium-range order in Cu-Zr metallic glasses analyzed using the p3 code

**Augustin Lu Anh Khoa** **O39**  
*Advanced Institute for Materials  
Research, Tohoku Univ., Japan*

11:40 – 12:00 Signatures of structural differences in Pt-P- and Pd-P-based bulk glass-forming liquids

**Oliver Gross** **O40**  
*Saarland University, Germany*

12:00 – 12:20 Structural Properties of Expanded Liquid Carbon C60

**El Sayed Osman** **O41**  
*Sultan Qaboos University,  
Muscat, Oman*

**11:20 – 12:20 Session B7: Auditorium AE1**

*Functional Materials II - funded by Institut Carnot  
Ingénierie@Lyon*

Chair: M. Brunelli

11:20 – 11:40 Thermophysical properties of undercooled liquid Zr-Cu-x alloys under microgravity

**Stefanie Koch** **O42**  
*Friedrich-Schiller-University  
Jena, Germany*

11:40 – 12:00 The role of Ga addition on the thermodynamics, kinetics, and tarnishing properties of the Au-Ag-Pd-Cu-Si bulk metallic glass forming system

**Nico Neuber** **O43**  
*Saarland University, Germany*

12:00 – 12:20 Metallic glasses micro-parts molding and determination of the alloy properties by an experimental inverse analysis.

**Bruno Lavis** **O44**  
*SIMaP, CNRS, Univ. Gre.  
Alpes, France*

**12:20 – 13:50 Lunch at L'Olivier**

<b>13:50 – 15:00</b>	<b>Session A8: Auditorium Pierre-Gilles de Gennes</b> <i>Crystallization and glass transition II</i>	Chair: D. Fabrègue	
13:50 – 14:20	<b>Invited Keynote:</b> Vitrification kinetics versus atomic mobility in metallic glass-formers studied by fast scanning calorimetry	<b>Isabella Gallino</b> Saarbrücken University, Germany	<b>KL3</b>
14:20 – 14:40	Convective effects in undercooled liquids during dendritic crystallization	<b>Andrew Kao</b> University of Greenwich, United Kingdom	<b>O45</b>
14:40 – 15:00	The fragility of bulk metallic glass forming liquids studied via modulated DSC	<b>Maximilian Frey</b> Saarland University, Germany	<b>O46</b>
<b>13:50 – 15:00</b>	<b>Session B8: Auditorium AE1</b> <i>Functional Materials III – funded by Institut Carnot Ingénierie@Lyon</i>	Chair: F. Demel	
13:50 – 14:20	<b>Invited Keynote:</b> Supercritical metal-based liquids: dynamical crossover and metal - nonmetal transition	<b>Yuri Fomin</b> Russian Academy of Sciences, Russia	<b>KL4</b>
14:20 – 14:40	Electronic transport in solid Ni <sub>64</sub> -Zr <sub>36</sub> alloy (amorphous and recrystallized). Effect of temperature and time.	<b>Jean-Georges Gasser</b> Laboratoire de Chimie et Physique, Université de Lorraine, France	<b>O47</b>
14:40 – 15:00	Yttria precipitates formation in a Cu-based amorphous alloy to improve mechanical properties.	<b>Damien Fabrègue</b> MATEIS -INSA Lyon, France	<b>O48</b>
<b>15:00 – 18:00</b>	<b>Social activities – Visit Lyon</b>		

## LAM-17 Conference

Day 4 - Thursday 29<sup>th</sup> August 2019

09:00 – 09:45	<b>Plenary Talk:</b> Auditorium Gaston Berger The Landau-Placzek plateau in liquid iron via sub-meV resolution inelastic x-ray scattering at sub-nm <sup>-1</sup> momentum transfers	<b>Alfred Baron</b> Materials Dynamics Laboratory, Sayo, Hyogo, Japan	<b>PL4</b>
<b>09:50 – 10:50</b>	<b>Session A9: Auditorium Pierre-Gilles de Gennes</b> <i>Thermal, transport properties and dynamics I</i>	Chair: A. Baron	
09:50 – 10:10	On the existence of two contributions from collective excitations to the transverse dynamics of liquid metals	<b>Jean-François Wax</b> Université de Lorraine, France	<b>O49</b>
10:10 – 10:30	Phonon excitations in liquid Au	<b>Shinya Hosokawa</b> Kumamoto University, Japan	<b>O50</b>



10:30 – 10:50 Phonons attenuation in a 2D nanocomposite

**Haoming Luo** **O51**  
LaMCoS-INSA Lyon, France

**09:50 – 10:50 Session B9: Auditorium AE1**

*Metallic glass formers characterization II*

Chair: C. Martinet

09:50 – 10:10 Characterization of a novel titanium based bulk metallic glass in the quaternary

**Bastian Adam** **O52**  
Saarland University, Germany

10:10 – 10:30 Development of novel bulk glass-forming alloy compositions in the Ti(Zr)-Ni-Cu-S system

**Lucas Ruschel** **O53**  
Saarland University, Germany

10:30 – 10:50 On the relationship between short-range structure and atomic dynamics in melts of glass-forming metallic alloys

**Dirk Holland-Moritz** **O54**  
German Aerospace Center, Köln, Germany

**10:50 – 11:20 Coffee break – Blaise Pascal Hall**

**11:20 – 12:20 Session A10: Auditorium Pierre-Gilles de Gennes**

*Local and medium range order in liquids and amorphous IV*

Chair: G. Vaughan

11:20 – 11:40 Glass structure and characteristic connectivity of mobile ions in fast ion-conducting chalcogenide glasses

**Takeshi Usuki** **O55**  
Faculty of Science, Yamagata University, Japan

11:40 – 12:00 Structure and properties of Al-Cu-Fe and Al-Cu-Ni melts

**Larisa Kamaeva** **O56**  
Udmurt Federal Research Center of Ural Branch RAS, Russia

12:00 – 12:20 The factors affecting the carbide formation in ternary iron-chromium-carbon system close to the melting point

**Andrey Sobolev** **O57**  
South Ural State University, Russia

**11:20 – 12:20 Session B10: Auditorium AE1**

*Thermo-Physical characterization of metallic alloys*

Chair: V. Sidorov

11:20 – 11:40 Transition from high-entropy to conventional alloys in amorphous and crystalline systems

**Emil Babic** **O58**  
Department of Physics, Faculty of Science, University of Zagreb, Croatia

11:40 – 12:00 Partial pair correlation functions of liquid VZrNbHfTa high-entropy alloy

**Ilya Balyakin** **O59**  
Institute of Metallurgy Ural Branch of Russian Academy of Science, Russia

12:00 – 12:20 Thermo-physical characterization of sulfur-bearing bulk metallic glasses

**Alexander Kuball** **O79**  
Saarland University, Germany

**12:20 – 14:00 Lunch at L'Olivier**

<b>14:00 – 15:30 Session A11: Auditorium Pierre-Gilles de Gennes</b> <i>Novel experimental approaches</i>		Chair: S. Le Floch	
14:00 – 14:30	<b>Invited Keynote:</b> Dielectric and Mechanical Response beyond the Linear Regime	<b>Birte Riechers</b>	<b>KL5</b> <i>Arizona State University, USA</i>
14:30 – 14:50	High resolution inductive electrical resistivity measurement of electromagnetically levitated liquid metal droplets	<b>Georg Lohöfer</b>	<b>O61</b> <i>German Aerospace Center, Germany</i>
14:50 – 15:10	X-ray photon correlation spectroscopy for probing slow atomic scale relaxations in glasses and supercooled liquids.	<b>Yuriy Chushkin</b>	<b>O62</b> <i>ESRF, Grenoble, France</i>
15:10 – 15:30	Unraveling non-equilibrium thermal relaxation in semiconductors using ultrafast x-ray diffuse scattering measurement at PAL-XFEL	<b>Sooheyong Lee</b>	<b>O63</b> <i>Korea Research Institute of Standards and Science, South Korea</i>
<b>14:00 – 15:30 Session B11: Auditorium AE1</b> <i>Extreme conditions and metastability II</i>		Chair: R. Tochio	
14:00 – 14:30	<b>Invited Keynote:</b> Pressure-induced structure and properties tuning of metallic glasses	<b>Qiaoshi Zeng</b>	<b>KL6</b> <i>HPSTAR, Shanghai</i>
14:30 – 14:50	Pressure-induced structural change of liquid sulfur from polymeric liquid to simple liquid	<b>Satoshi Ohmura</b>	<b>O64</b> <i>Hiroshima Institute of Technology, Japan</i>
14:50 – 15:10	Behaviors of disordered alloys under various thermodynamic conditions	<b>Xiaodong Wang</b>	<b>O65</b> <i>Zhejiang University, China</i>
15:10 – 15:30	Comparative estimation of the properties of liquid metals at high temperatures and pressures using the methods of classical and first-principle molecular dynamics	<b>Boris Gelchinski</b>	<b>O66</b> <i>Institute of Metallurgy of Ural Branch of the Russian Academy of Sciences, Russia</i>
<b>15:30 – 16:00 Coffee break – Blaise Pascal Hall</b>			
<b>16:00 – 17:10 Session A12: Auditorium Pierre-Gilles de Gennes</b> <i>Plasticity and mechanical behaviour II</i>		Chair: A. Tanguy	
16:00 – 16:30	<b>Invited Keynote:</b> Characterising residual stress states of athermally driven glasses	<b>Kirsten Martens</b>	<b>KL7</b> <i>LiPhy, Univ. Grenoble Alpes, France</i>
16:30 – 16:50	Plasticity of amorphous materials: from atomic to mesoscopic scale	<b>Damien Vandembroucq</b>	<b>O67</b> <i>PMMH, Sorbonne Université, France</i>
16:50 – 17:10	Full decomposition of plasticity in terms of Eshelby inclusions in amorphous solids studied with molecular dynamics	<b>Tristan Albaret</b>	<b>O68</b> <i>ILM, Université Claude Bernard, Lyon, France</i>

<b>16:00 – 17:10</b>	<b>Session B12: Auditorium AE1</b> <i>Diffusion and relaxation processes in liquids and glasses II</i>	Chair: T. Bryk
<b>16:00 – 16:30</b>	<b>Invited Keynote:</b> Mass transport and structural relaxation in glass-forming alloy melts	<b>Fan Yang</b> <b>KL8</b> <i>Deutsches Zentrum für Luft und Raumfahrt, Köln, Germany</i>
<b>16:30 – 16:50</b>	Self-diffusion in Mercury investigated with quasi-elastic neutron scattering	<b>Sandro Szabo</b> <b>O69</b> <i>MLZ, Technical University of Munich, Germany</i>
<b>16:50 – 17:10</b>	From supercooled to glass: opposite effects of weak self-propulsion on relaxation	<b>Natsuda Klongvessa</b> <b>O70</b> <i>ILM, Université Claude Bernard, Lyon, France</i>
<b>17:10-18:30</b>	<b>Free time</b>	
<b>18:30 – xxx</b>	<b>Gala Dinner</b>	

## LAM-17 Conference

### Day 5 - Friday 30<sup>th</sup> August 2019

<b>09:00 – 09:45</b>	<b>Plenary Talk:</b> Auditorium Gaston Berger <i>Strings in Glasses---Metallic and Otherwise</i>	<b>Fernando Lund</b> <b>PL5</b> <i>Universidad de Chile, Santiago, Chile</i>
<b>09:50 – 10:50</b>	<b>Session A13: Auditorium Pierre-Gilles de Gennes</b> <i>Thermal, transport properties and dynamics II</i>	Chair: J.F. Wax
<b>09:50 – 10:10</b>	Specific features of dynamics in expanded liquid mercury in the region of metal-nonmetal transition: Ab initio study	<b>Taras Bryk</b> <b>O71</b> <i>Institute for Condensed Matter Physics, Ukraine</i>
<b>10:10 – 10:30</b>	The Stokes-Einstein relation of a simple liquid metal and its relationship to changes in the microscopic dynamics with increasing temperature	<b>Franz Demmel</b> <b>O72</b> <i>ISIS Facility - Rutherford Appleton Laboratory, United Kingdom</i>
<b>10:30 – 10:50</b>	To understanding of slow and non-monotonic relaxation processes in liquid eutectics	<b>Mikhail Vasin</b> <b>O73</b> <i>Institute for High Pressure Physics of the RAS, Russia</i>
<b>09:50 – 10:50</b>	<b>Session B13: Auditorium AE1</b> <i>Plasticity and mechanical behaviour III</i>	Chair: F. Lund

09:50 – 10:10 Investigations on the annealing-induced structural changes in the Zr<sub>48</sub>Cu<sub>36</sub>Al<sub>8</sub>Ag<sub>8</sub> bulk metallic glass and their effects on the kinetic and mechanical properties

**Sascha S. Riegler** **O74**  
Saarland University,  
Germany

10:10-10:30 Control of microstructural evolution of bimetallic Janus particles

**Alberto Fraile Garcia** **O75**  
Czech Technical University  
in Prague, Czech Republic

10:30 – 10:50 Casimir Effect as a Complex Response of Near-Critical Binary Liquid Mixture Analyzed with Atomic Force Microscopy

**Masami Kageshima** **O76**  
Osaka Electro-  
Communication Univ., Japan

**10:50 – 11:20 Coffee break – Blaise Pascal Hall**

**11:20 – 12:00 Session A14: Auditorium Pierre-Gilles de Gennes**  
*Thermal, transport properties and dynamics III*

Chair: N. Jakse

11:20 – 11:40 Density fluctuations of supercooled liquid Te

**Yukio Kajihara** **O77**  
Hiroshima University, Japan

11:40 – 12:00 Thermodynamic perturbation theory: Mon's correction in terms of pair potentials

**Nikolay Dubinin** **O78**  
Ural Federal University,  
Russia

**12:00 – 12:20 Conclusions**

Organisers

**12:30 – 14:00 Lunch at L'Olivier**