University of Applied Sciences and Arts
of Southern Switzerland
SUPSI

DYMAT 2015

DYMAT 2015

11th International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading

Conference Brochure
Palazzo dei Congressi, Lugano
September 7th – 11th, 2015
Lugano, Switzerland

DYMAT 2015

11th International Conference
on the Mechanical and Physical Behaviour
of Materials under Dynamic Loading

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Stefan Hiermaier

DYMAT
President

Freiburg, April 12th 2015
DYMAT, the European Association for research into the dynamic behaviour of materials and its applications, has been organizing a five days single sessions conference of oral presentations and poster exhibitions since 1983. The triennially DYMAT International Conferences are the platform to present the most recent scientific achievements on dynamic behaviour of materials.

Being an association of leading research institutions in Europe and well linked to the relevant industry sectors, DYMAT can claim excellence in science along with industry oriented research and a variety of platforms to publish. Where the spectrum of events to gather and to exchange is ranging from the International Conference over Technical Meetings, Working Groups to Student Camps. The success of the institution also became visible at the exceptional meeting of former presidents and governing board members 2013 in Paris when DYMAT celebrated its 30 anniversary. 2014 was the DYMAT year to celebrate the centenary of the epoch making invention by Bertram Hopkinson (1894 – 1918). With his 1914 seminal paper, "A method of measuring the pressure produced in the detonation of high explosives or by the impact of bullets" Phil. Trans. R. Soc. Lond. A 213 437-456, Bertram Hopkinson pioneered the development of an experimental set-up which even nowadays seems to be in greater demand than ever.

The Hopkinson Centenary Conference was intended to commemorate this groundbreaking invention and to reflect the most recent scientific developments in the area of Hopkinson bar type tests for dynamic material testing. With Cambridge University as the place where Bertram Hopkinson studied at Trinity College and where he was Professor for Mechanisms and Applied Mechanics, a perfect location could be found for the Centenary Conference. DYMAT 2015 will have the honour of being the third DYMAT International Conference to give the John S. Rinehart's Award. This distinction, established in 1990 to recognize outstanding effort and creative work in the science and technology of dynamic processes in materials, has been awarded every five years on the occasion of several Explomet International Conferences. Since 2009, DYMAT is the Custodian of the Award. A special jury, composed of the members of the DYMAT International Advisory Committee and members of the DYMAT Governing Board, voted and selected two winners. Our sincere congratulations go to Carlo Albertini and to Ron Armstrong, the two recipients of the John S. Rinehart Award 2015.

My sincere gratefulness goes to Professor Ezio Cadoni, chairman of the Conference and co-editor of the 2015 EPJ-ST issue. Ezio has completed a remarkable work in the organization and the success of this conference. My thanks go to him and his colleagues, who greatly contributed to the success of DYMAT 2015. Finally, I would also like to thank the members of the International Advisory Committee and the Governing Board for their commitment in ensuring the high scientific level of the conference.

Ezio Cadoni

DYMAT2015 Chair
Vice-President of DYMAT

Dear guests of DYMAT 2015
the XI International Conference on the Mechanical and Physical Behaviour of Materials under Dynamic Loading – DYMAT2015, programmed between September 7th and 11th 2015 in Lugano (Switzerland) is being organized by the DynaMat Laboratory of the University of Applied Sciences and Arts of Southern Switzerland (SUPSI). After 30 years from the first edition for the first time this important conference arrives in Switzerland, and for our institution this conference is an exceptional occasion to bring together the worldwide scientific community interested in the dynamic behaviour of materials. We are honoured to organize this very important conference.

As tradition of DYMAT conference, specific emphasis was set to five key topics: Experimental Techniques, Microstructural Effects, Biomechanics, Modeling and Numerical Simulation as well as Industrial Applications. With authors from 32 countries from 5 continents, the DYMAT Conference confirmed once more its international character. As for previous edition we offered two different types of publications: the traditional DYMAT proceedings, published in the "European Physical Journal – Web of Conference" (EPJ-WoC) and a special issue of the "European Physical Journal – Special Topics" (EPJ-ST), entitled "Dynamic Behaviour of Materials at High Strain rates: Experiments, Modelling and Simulation".

The 184 manuscripts published in the proceedings, the 18 manuscripts published in the journal EPJ-ST as volume number 224, collectively provide an excellent snapshot of the state-of-the-arts in the field of the mechanical properties of materials at high rates of strain and highlights some remarkable modern developments and industrial applications. I want to express my sincere gratefulness to all authors and reviewers for their generous efforts, without whose expertise there would have been no conference. A sincere thanks to all participants, sponsors and institutions, for their great support towards a successful DYMAT2015.

Finally, it is appropriate that we record our thanks to DYMAT Governing Board and International Advisory Committee members for their enthusiastic support in all phases of the DYMAT2015 organization, and for the very important management help.

I am also indebted to our local organization team that provided generous support for the conference. Their efforts gave a great contribution to DYMAT 2015 success.

We wish you a fruitful experience throughout the DYMAT event.
Welcome everybody to Lugano, enjoy the conference!

About DYMAT

Welcome

The DYMAT conferences are of high interest for everybody concerned with the dynamic behaviour of materials with aspects such as experimental techniques, constitutive modeling, micro-structural effects, numerical simulations.

The dynamic behaviour of materials is relevant in multiple applications such as crashworthiness in transport including cars, trains, boats and airplanes; terminal ballistics related to defence, shielding of satellites, of turbine blades and discs; blast effects due to industrial explosions, terrorist attacks; material processing such as high-speed shaping of metals.

The principal aim of the DYMAT Association is to bring together engineers and scientists from all nations working in these fields. For this purpose, every three years the DYMAT Association organises an international conference (since 1985). We also encourage the holding of technical meetings, seminars, training courses, student camps.

The DYMAT Association endeavours to strengthen or to develop the connections with other scientific associations involved in similar fields of research.

We invite you to visit our website www.dymat.org, get to know our Associationand become an active member of it.

DYMAT members are invited to participate in the DYMAT General Assembly on Thursday, September 10th, 2015 (1st Floor, Room C), 17:00-18:30

Membership

DYMAT membership fees are € 40 (one year) or € 100 (three years).

Why become a DYMAT member?

There are many reasons to join us:

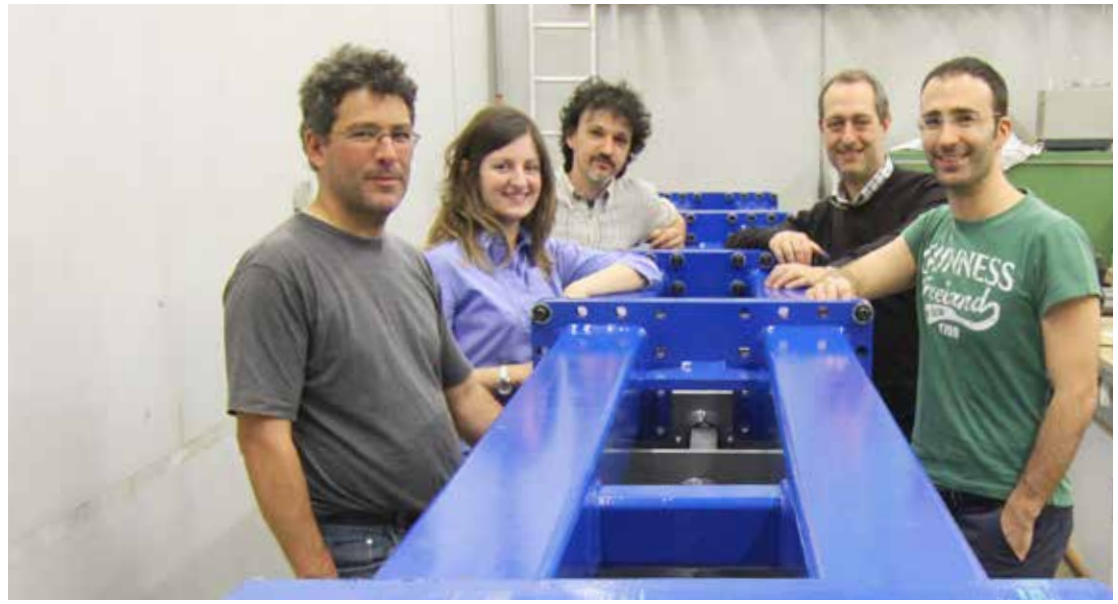
- DYMAT members have free access to all e-publications of the DYMAT international conferences, technical and subgroup meetings since the creation of DYMAT in 1983.
- DYMAT members can submit a request for financial support for the organisation of symposiums or special sessions in multidisciplinary conferences related to the dynamic behaviour of materials.
- DYMAT members pay a reduced fee at DYMAT international conferences and technical meetings.
- DYMAT members have free access to the protected area of our website providing detailed information about the member laboratories, recent theses, review publications.
- DYMAT members are invited to the yearly DYMAT General Assembly, vote on the president's and treasurer's report, submit requests, and vote for the composition of the DYMAT Governing Board. DYMAT members can be elected as DYMAT governing board members and participate in the decision making process of the association (certain conditions apply).

For more information about DYMAT, visit the official website:

www.dymat.org.

About DynaMat laboratory

DynaMat Staff (from left to rigth): Matteo Dotta, Nicoletta Tesio, Gianmario Riganti, Ezio Cadoni and Daniele Forni.



The DynaMat laboratory is a competence centre of SUPSI specialised in impact on materials and structures both at the numerical simulation and experimental level.

DynaMat-Lab is an advanced laboratory for mechanical characterization of materials in fast dynamics able to measure accurately the stress-strain curves of materials in tension, compression and shear in a large range of strain-rates (from 10-6 a 105 s-1).

DynaMat acts as a point of reference for the industry and research centres of the region as key-player support in the design, development and optimization of production processes.

In 2006 the laboratory started its full activity aiming to develop the research on materials and on structures subject to dynamic-impulsive loads, favour the technological transfer and spread an integrated approach facing design-testing to improve safety and quality of products.

We are able to perform tests in tension, compression, shear and bending for different materials at high strain-rates and in a large field of temperature (-100÷900°C).

Many activities have been developed in to the field of thin sheet steel used by the automotive industry or steel used for the structures of nuclear reactors, aluminum and magnesium alloys used in aero-space, plain and fibre-reinforced concrete and fibre-reinforced composite polymers.

We are skilled on the calibration of materials constitutive laws and able to perform simulation of dynamic events (LS-Dyna).

About SUPSI

The University of Applied Sciences and Arts of Southern Switzerland (SUPSI) is one of the nine professional universities recognised by the Swiss Confederation. Founded under federal law, SUPSI offers more than 30 Bachelor's Degree and Master's Degree courses, characterised by cutting edge education which unites classical theoretical-scientific instruction with a professional orientation. Great care is given to research, carried out in key sectors on competitively acquired projects with large European and national agencies or mandated by organisations and institutions.

The distinctive features of SUPSI are its ability to:

- achieve a harmonious amalgamation of its university and professional roles, by focussing specifically on quality when operating in its diverse sectors;
- when necessary, adopt a multidisciplinary approach, in response to the demands of an increasingly complex situation requiring the application of a broad range of skills and knowledge;
- understand and satisfy the needs of the various stakeholders, in line with the principles of sustainable development.

Vision for the future

SUPSI as an agent for change, contributing to the development of a culturally forward-looking region, epitomised by companies, organisations and professional operators who are able to address the complexity of socio-economic, technological, environmental and cultural phenomena, in line with the principles of sustainable development.

Mission

In a society marked by profound changes, SUPSI produces, develops and disseminates knowledge and expertise as propellant forces fundamental to supporting the economic, social, technological and artistic progress of the region, and to contributing to the cultural and ethical growth of both society as a whole and its individual members. In order to achieve this goal, SUPSI operates in the fields of first and second level university education, continuing education, applied research, and in the provision of consulting and support services to businesses and institutions, adopting a collaborative and cooperative stance with the main interlocutors.

SUPSI acts as a cultural and relational bridge connecting Southern Switzerland – which can be defined as the chosen reference region – to the rest of Switzerland and to Northern Italy.

Values

- strength in teaching, research and service provision activities, responsive, in terms of both form and content, to the actual needs of the user;
- originality, in the institution's ability to present itself with methodologies integrating theory and practice, and with a flexible organisational structure that can give a balanced appreciation to issues of identity and difference;
- multidisciplinarity, as the approach integrating diverse fields of knowledge in order to find solutions to complex problems, combining the economic, environment and social aspects of sustainability;
- partnership internally, with the academic institutions and with other public and private organisations, in order to act in a synergic and efficient manner;
- innovation, as a constant fundamental objective, in order to adopt a proactive stance in predicting the future developments of a rapidly evolving situation;
- territoriality, when executing the institutional mandates, indicating the special focus placed on the needs of the reference region;
- internationality, to create opportunities for international mobility and cooperation for teachers, researchers and students.

About Lugano

Lugano, a Swiss City

Lugano is a city of 65,000 people in the sub-alpine lake district at the very southern tip of Switzerland; to the east, it borders the Italian province of Como. The city, situated within a natural amphitheatre made up of hills and mountains overlooking the lake, is dominated by Monte Bré and Monte San Salvatore, view-points offering thrilling panoramic vistas.

Over the years, Lugano has undergone a process of constant transformation: from a mediaeval fishing village with a significant agricultural sector and rural way of life to a popular 19th-century destination for tourists; its Belle Époque heyday was followed by its present identity as a centre for conference tourism.

Over the last few decades, economic development and administrative reorganisation have allowed Lugano to free up the resources needed to promote new urban development projects; thanks to the establishment of Ticino University, the city now plays host to an array of specialised research institutes. It has thus been able to play a key role as a knowledge society hub. Nowadays, Lugano is an attractive city for many high added value professions typical of the new services sector.

History

Lugano is of ancient origins. There are sure traces of the small lake and rural borough dating back to the 10th century. It was the object of continuous ducal disputes (Como and Milan) and then Lugano became a Swiss dominion in 1513, a dominion that lasted until 1798, a year in which, under the pressure of the great European upheavals, it asked and obtained independence, thus becoming part of the Swiss Confederation.

The history of the urban development of the city of Lugano can be subdivided into four phases. The mediaeval form lasted until the end of the eighteenth century.

After the shift from the old to the new regime (1798-1847), the social scene changed, and the city expanded beyond the traditional urban circle of walls limited by the gates which were pulled down. There was a change from the old form of the fortified borough to the open form of the modern city.

From 1880 to 1910 the city experienced, especially after the opening of Gotthard's railway line, an exceptional demographic increase. During those thirty years the population growth was almost 8000 inhabitants, going from 6949 to 14998 units.

From 1900 to 1945 the City underwent important urban changes caused by another demographic increase and economic pressure which really changed radically the structure of the old town centre and of whole districts. The financial and banking sector started its development at a moderate pace at the beginning of the 20th century and has grown at a steady pace since the sixties and the seventies.

After only a few decades Lugano has become the third financial market in Switzerland. The financial sector has continued to expand even after the creation of the Euro and nowadays all the main Swiss and international banks that are involved in private banking operate in Lugano.

Tourism, finance and trade are therefore the leading sectors of the City's economy, which, as a whole, guarantee more than 30'000 jobs.

Parks and gardens

Lugano's parks and gardens are renowned for their beauty and excellence. All parks are in fact among the greatest community assets.

Lugano's tradition in gardening, as it was conceived in the past, has led to the strengthening of the image of

the City. However, this tendency to look at this memorable tradition is now disappearing due to the increase of costs. Despite the high costs, the City of Lugano has tried to find a solution in order to preserve the natural heritage of the City. This is the reason why the City of Lugano has invested money in the care of the botanical heritage as well as the numerous infrastructures of parks and gardens.

Parks range from those with ornamental gardens, through to playgrounds, to scenic lookouts and to nature parks.

The Lake of Lugano

Lago di Lugano, or Ceresio, constitutes, together with the 8000 surround, the greatest natural resource in the Region. Its unique shape appears like a composition of different lakes and gulfs around Porlezza, Lugano, Capolago, Agno and Ponte Tresa.

The lake of Lugano extends 35 km from Porlezza to Ponte Tresa, with a maximum width of 3 km between Lugano and Cavallino and an average width of slightly over one kilometre. Its maximum depth is 279 metres, situated between Gandria and the opposite shore.

The depth decreases considerably towards south, in particular from Campione towards the gulf of Agno and of Ponte Tresa.

Light, periodic winds called "breva" and "vento di tramontana" (north wind) blow across the lake, with at times also sudden fast and strong winds called "Porlezzina" blowing from the Gulf of Porlezza.

The steep mountain slopes plunge boldly into the water, allowing for panoramic views over the lake and the entire region from countless higher elevations: Monte Brè, Monte Boglia, Castagnola, San Salvatore, Sighignola, Monte San Giorgio, but also from other ones further away from the lake, like from Val Capriasca, Denti della Vecchia – for ever changing landscapes creating a profound emotional impact.

From Monte Baro, the mountain that together with the Cavaldrossa and the Camoghé wrap up Lugano and its valleys in the north, on a clear day the shiny golden Madonna statue on Milan's Dome can be seen with bare eyes.

The lake offers all water sports: swimming, water skiing, fishing, canoeing, sailing and wind surfing.

Tourism

Thanks to its mild climate, his natural and cultural heritage, Lugano is a popular destination. Lugano is situated in a Bay of the north shore of Lake Lugano, surrounded by several panoramic peaks. The old town and the citycentre, with its many buildings in Lombard style, exclusive museums, the mountains, the Lake and a dense calendar of events form a collection appealing to visitors, and for those who love the activity, both for those who prefer to relax.

Accommodation

Lugano offers a wide variety of accommodation. You can stay in luxury hotels as well as in normal pensions. For the youth hostel also exists. Near the city there are campsites and holiday cottages. The web site of Lugano Turismo offers the overview of offers available in the city within the section "Accommodation".

Gastronomy-Restaurants

Privileged Area from gourmet profile, Ticino and Lugano do honor to the culinary culture and I am particularly gratified by excellent award-winning restaurants from the most important gastronomic guides. The web site of Lugano Turismo offers the culinary overview of the city within the section "Recipes". For more information about restaurants and hotel industry of Ticino Gastro Ticino's website.

What to do and visit

Lugano offers a wide variety of leisure activities (hiking, sports, wellness, shopping), cultural (museums and guided tours) as well as a huge range of events (musical and otherwise).The web site of Lugano Turismo offers the overview of activities in the city within the section "what to do", "culture" and "events".

Further information can be found in the city guidebook which you will find in your conference bag or at the information desk.

The John Rinehart Award

The John Rinehart Award was established to recognise outstanding effort and creative work in the science and technology of dynamic processes in materials. This encompasses the processes by which materials are welded, formed, compacted, and synthesised, as well as dynamic deformation, fracture, and the extreme shock loading effects. The award is named after a true pioneer who witnessed and actively contributed to the field for over forty years.

John Rinehart

John S. Rinehart has actively taken part in the development of the field of dynamic deformation. He has dedicated his life to the study of stress waves in solids; the results of these investigations have been published in over 1 30 technical articles and three books, two of them co-authored by John Pearson. Behaviour of metals under impulsive loads, explosive working of metals and stress transients in solids, have been the vade mecum of all scientists and engineers throughout the world working in the field. The simple, no nonsense, yet fundamentally correct approach used by Dr. Rinehart combines the rigorousness of the physicist with the practicality of the engineer. His fifty year career has been divided between government and university, and he has frequently served as a consultant to industry. He has occupied many positions of high responsibility throughout his career.

Director of Research and Development for the U. S. coast and Geodetic Survey, Director of the Mining Research Laboratory of the Colorado School of Mines, which he founded, Assistant Director of the Smithsonian Astrophysical Observatory, Head of the Mechanics Branch at the Naval Ordnance Test Station, China Lake, Professor of Mechanical Engineering at the University of Colorado. Dr. Rinehart was associated with Dr. E. J. Workman's Ordnance Research Group before this activity became a division of the New Mexico Institute of Mining and Technology in the early 1950s.

Previous Award Winners

The John Rinehart Award has been given every five years, at the occasion of the EXPLOMET conferences. Since 2009, DYMAT is the custodian of the award.

EXPLOMET 90
Andrey A. Deribas and Mark L. Wilkins

EXPLOMET 95
Rolf Prummer and Akira B. Sawaoka

EXPLOMET 2000
Don Shockey and Don Curran.

TMS 2007
Lawrence E. Murr and Yilong Bai

DYMAT 2009
John E. Field and Marc André Meyers

DYMAT 2012
Alain Molinari

Carlo Albertini

Winner of the DYMAT 2015 John Rinehart Award

Carlo Albertini born in Parma (Italy) where he studied Physics at the University of Parma. Since 1963 he was researcher at the Joint Research Centre (JRC) of the European Commission. He developed a precision impact testing laboratory based on the modification of the Hopkinson bar technique for the measurement of the mechanical properties at high strain rate of as-received and irradiated nuclear reactor materials. The laboratory consisted of unique uniaxial and biaxial hydro-pneumatic and Hopkinson bar devices including the largest Hopkinson bar in the world (5MN loading capacity, 1,5 m displacement, 35 m/s speed, 200 m length). He was project leader of the JRC programme of reference impact testing on automotive materials and structures. He was the founder of Dynalab, a spin-off company of JRC, authorized by the European Commission, with the aim of JRC technology transfer in the field of precision impact testing to industrial and academic laboratories. He was responsible of the creation and activation of material impact testing laboratories at: Arcelor (France), University of Trondheim (Norway), Impact Engineering Laboratory (Japan), Tianjin University (China), SUPSI (Switzerland), FIAT (Italy). His scientific activity is illustrated in more than hundred papers published in scientific Journals and in the proceedings of specialized international conferences. 17 European and worldwide patents had Albertini as co-inventor mainly showing his innovation capability in this field.

Ron Armstrong

Winner of the DYMAT 2015 John Rinehart Award

Ron Armstrong is emeritus professor, University of Maryland, College Park, MD, U.S.A., in the Department of Mechanical Engineering, Center for Energetic Concepts Development; see www.cecd.umd.edu. He was educated at Johns Hopkins University, Baltimore, MD, 1952-5, and Carnegie Institute of Technology, Carnegie-Mellon University, Pittsburgh, PA, 1955-8. Previous employment was at Westinghouse Research Laboratories, Monroeville, PA, and Brown University, Providence, RI. Numerous visiting research positions have been with industrial and government laboratories in the United States and overseas. Principal research activities with students and colleagues have included: (1) studies of polycrystalline material strength properties, most notably with N.J. Petch, Leeds University and University of Strathclyde, U.K.; (2) microstructural aspects of fracture mechanics properties, with G.R. Irwin, U.S. Naval Research Laboratory and University of Maryland; (3) crystal perfection and initiation of detonation in energetic materials, with W.L. Elban, U.S. Naval Surface Warfare Center and Loyola University Maryland; and (4) development of constitutive relations for material dynamics calculations, with F.J. Zerilli, U.S. Naval Weapons Center, White Oak Laboratory and Indian Head Division, MD.

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Conference organization

Gianmario RIGANTI
Conference organization

Nicoletta TESIO
Conference organization

Giorgia COSENZA
Administrative secretary

Conference Venue

The Congress Hall

The Congress Hall is located in Lugano's city centre, both close to the city's financial and recreational infrastructures but also overlooking the lovely Ciani Park and the lakeshore. The structure is just a few minutes on foot from several hotels, shops and other entertainments. Ideal for all sorts of events, the Congress Hall is equipped with the most modern technical equipment and is completely air-conditioned.

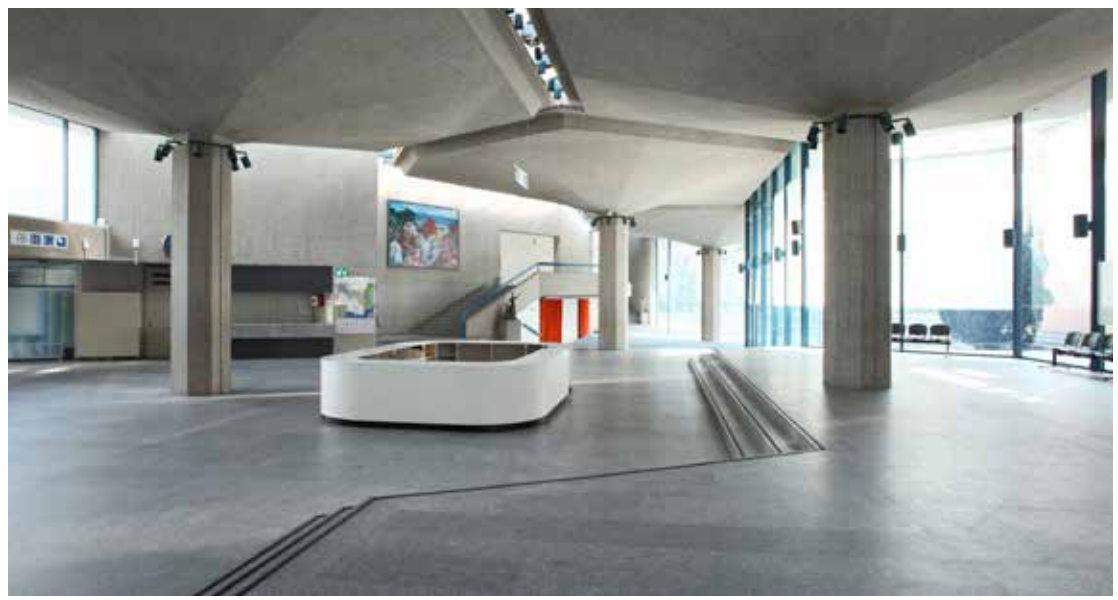
Halls and Exhibition Space Capacity

On the ground floor guests are welcomed in the large 1'100 sq. metres foyer, next to which the amphitheatre is to be found, seating up to 1130 people. On the first floor, there are several large spaces with bright windows looking out over the park and a large hall (more than 800 sq. metres), which can be divided into three sections.

Atrium

The Convention Centre Atrium is on two floors and is divided into different areas. The different atriums can be ideally used for networking moments during breaks, for banquets, receptions and exhibitions thanks to the ceiling that varies in heights from 2.4 to 6.8 m.

The Atrium on the ground floor, besides the above-mentioned services offers a practical and direct access to the park and to the Parco Ciani Restaurant.



General Guidelines

Orientation
The most important conference areas are indicated on the orientation maps, in the aside page.

The opening of the conference and all oral presentations take place in the amphitheatre on the ground floor.

(Please turn off your mobile while being in the conference room and remember that it is not allowed to drink and eat in the conference room).

- C The *DYMAT General Assembly* take place in room c, on the 1st floor.
- A *The poster area*, the *technical exhibition* booths and the *coffee break area* are located on the ground floor in the Convention Centre Atrium.
- D *The conference information desk* can be found at the entrance on the ground floor.
- B *The lunch area* is on the 1st floor, room B.
- E *Restrooms are located* at the ground floor.
- F *The smoking area* is outside the Congress Hall.

Conference Badge
Upon check-in, you have received a personal badge. Please wear your badge upon entering the conference centre and at all times during your stay within the conference centre. Accompanying persons receive a separate badge. Please bring your badge to the conference tour (Wednesday),a nd to the conference dinner (Thursday).

Information desk
For questions or problems, please contact the information desk. It is open throughout the conference, except on Wednesday afternoon (conference tour).

Internet
The conference centre offers wireless internet access. *SSID* and *wi-fi Password* will be available at the information desk.

Oral Presentations
For complete list of scientific oral presentations please see the "Programme" p. 28-33. For further instructions, we ask all speakers as well as the session chairmen & co-chairmen to join the oral presentation responsible staff member in front of the conference room 20 minutes prior to the start of their session.

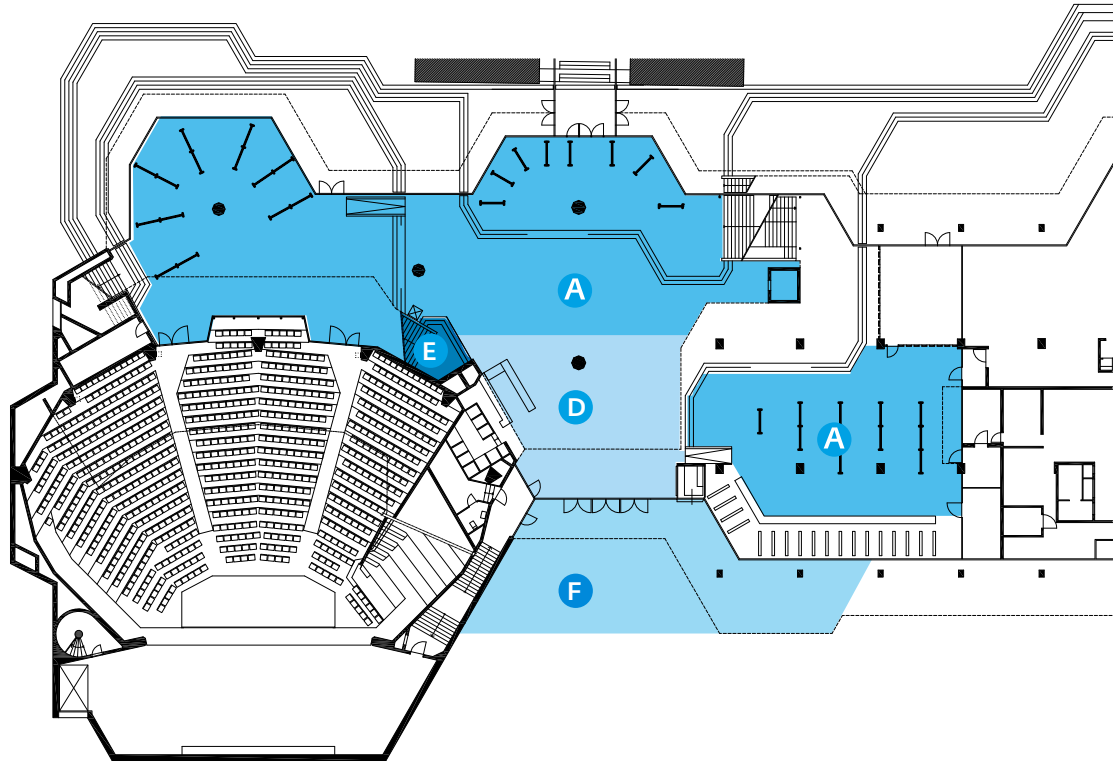
Poster Presentations
All poster presentations run during the entire week (except on Wednesday afternoon).
Poster sessions are scheduled on Tuesday and Thursday while the lunch time.
Authors are invited to remove their posters before Friday 11th September, 12.00.

Technical Exhibition
The technical exhibition runs during the entire week (except on Wednesday afternoon). More information about the technical exhibition parties you will find further in this brochure.

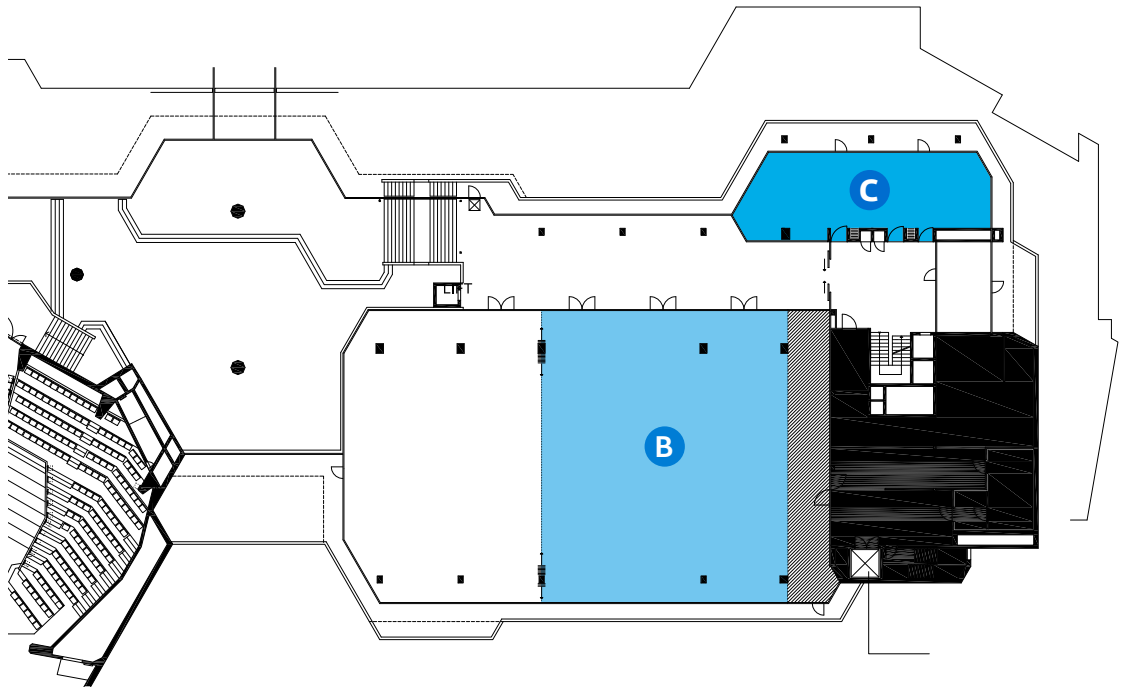
Conference Tour with Dinner
You will find a coloured sticker attached to your personal badge. You are assigned to the bus with the corresponding colour. Please use the same bus during the whole conference tour on Wednesday afternoon. The meeting point for the start of the conference tour is indicated in front of the Congress Hall.
Bus departure at 13:45.

Social Event
The concert and the conference dinner take place also at the Congress Hall. Please see the "Programme" p. 28-33.

GROUND FLOOR

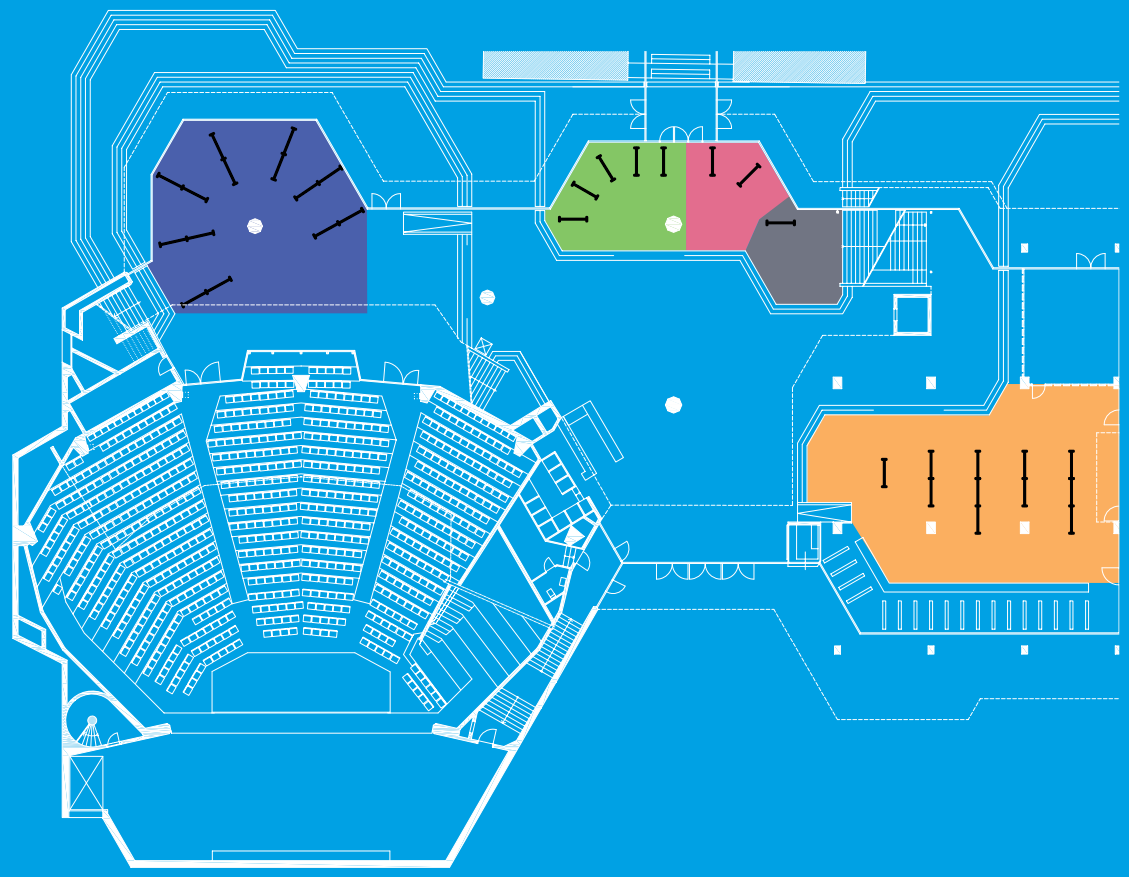


FIRST FLOOR



Programme

- "Microstructural Effects"
- "Modelling and Numerical Simulation"
- "Experimental Technique"
- "Biomechanics"
- "Industrial Applications"



SUNDAY
SEPT. 6TH
2015

15.00	Technical Exibition Set-Up
16.30	Pre Check-Inv
	Poster Set-Up
17.00-19.00	Ice breaking cocktail

MONDAY
SEPT. 7TH
2015

8.00	Check-in		
	Opening Session		
9.00	Welcome	Ezio Cadoni (CH) Chairman of DYMAT2015	
9.10	Conference Opening	Stefan Hiermaier (DE) President of DYMAT	
9.20	John Rinehart Award Cerimony	Stefan Hiermaier and Ezio Cadoni	
9.30	JR-Keynote Address	JR Award Laureates	
10.30	Coffee Break		
●	***Session 1 "Microstructural Effects 1"***	Chairmen: ***S. Hiermaier, T. Holmquist***	
11.00	Dynamic versus quasi-static loading of X65 offshore steel pipes	M. Kristoffersen (NO)	EPJ-ST 08
11.20	Twinning in Magnesium under dynamic loading	K. Ramesh (USA)	EPJ-WoC 02018
11.40	Structure / Property (Constitutive and Dynamic Strength / Damage) Characterization of Additively Manufactured 316L SS	G. Gray (USA)	EPJ-WoC 02006
12.00	On the Importance of Recrystallization to Reproduce the Dynamic Plastic Deformation of a Pure Nickel	H. Couque (FR)	EPJ-WoC 02024
12.20	Announcements		
12.30	Lunch Break		
●	***Session 2 "Modelling and Numerical Simulation 1"***	Chairmen: ***A. Cosculluela, R. Armstrong***	
13.40	A method for the determination of the viscoelastic relaxation function of reactive materials	N. Heider (DE)	EPJ-ST 17
14.00	Strain-rate Sensitivity of Foam Materials: a Numerical Study Using 3D Image-Based Finite Element Model	Q. Li (UK)	EPJ-WoC 04022
14.20	A Constitutive Model for the Compressive Response of Metallic Closed-Cell Foams Including Micro-Inertia Effects	R. Barthélémy (FRA)	EPJ-WoC 04014
14.40	3D Finite Element Simulation of Effects of Deflection Rate on Energy Absorption for TRIP Steel	A. Hayashi (JPN)	EPJ-WoC 04012
15.00	A 3-D Perspective of Dynamic Behaviour of Heterogeneous Solids	Y. Lu (UK)	EPJ-WoC 04038
15.20	Shock Characterization of an Ultra-High Strength Concrete	B. Erzar (FR)	EPJ-ST 12
15.40	Coffee Break		
●	***Session 3 "Experimental Technique 1"***	***Chairmen: P. Forquin, C. Albertini***	
16.10	Experimental analysis of the UHPFRCs behavior under tension at high stress rate	E. Cadoni (CH)	EPJ-ST 03
16.30	Analysis of concrete targets with different kind of reinforcements subjected to blast loading	M. Oña Vera (ESP)	EPJ-ST 04
16.50	Behaviour of RC-slabs Under Impact-loading	T. Kuehn (DE)	EPJ-WoC 01062
17.10	Influence of Loading-Rate and Fibers on the Shear Strength of Ultra High Performance Concrete	B. Lukic (FR)	EPJ-WoC 01073
17.30	Compressive Behaviour of Dam Concrete At Higher Strain Rates	A. Caverzan (IT)	EPJ-ST 05
17.50	Experimental Investigation of Bond Strength Under High Loading Rates	M. Michal (DE)	EPJ-WoC 01044
18.30	Governing Board Meeting		

TUESDAY SEPTEMBER 8TH 2015

	Session 4 "Experimental Technique 2"	***Chairmen: F. Galvez, A. Gilat***	
8.00	Behaviour of Plated Structures Subjected to Blast Loading	V. Aune (NO)	EPJ-WoC 01015
8.20	Investigations on Specimen Design and Mounting for Split Hopkinson Tension Bar (SHTB) Experiments	N. Ledford (DE)	EPJ-WoC 010
8.40	Crack Initiation At High Loading Rates Applying the Four-Point Bending split-Hopkinson Pressure Bar Technique	S. Henschel (DE)	EPJ-WoC 01028
9.00	Dynamic Compressive and Tensile Response of a Laser Engineered Net Shaping 304L Stainless Steel	E. Nishida (USA)	EPJ-WoC 01001
9.20	A comparison of DIC and grid measurements for processing spalling tests with the VFM and an 80 Kpixels ultra-high speed camera	D. Saletti (FR)	EPJ-ST 07
9.40	High Speed Imaging for Material Parameters Calibration At High Strain Rate	M. Sasso (IT)	EPJ-ST 06
10.00	Coffee Break		
	Session 5 "Experimental Technique 3"	***Chairmen: M. Meyers, M. Worswich***	
10.20	Strain Rate Change Tests with the Split Hopkinson Bar Method	M. Isakov (FIN)	EPJ-ST 01
10.40	Separation of the Elastic Waves' System in Pre-stretched Bar Devices	G. Haugou (FRA)	EPJ-WoC 01067
11.00	Tailored Ramp Wave Generation in Gas Gun Experiments	M. Cotton (UK)	EPJ-WoC 01065
11.20	Assessment of Dynamic Mechanical Behaviour of Reinforced Concrete Columns Using a Blast Simulator	M.Peroni (IT)	EPJ-WoC 01010
11.50	Lunch Break including Poster Session		
	Session 6 "Industrial Applications"	***Chairmen: M. Langseth, P. Verleysen***	
13.30	Strain Rate Effects on the Mechanical Behavior of Two Dual Phase Steels in Tension	N.K. Singha (IND) G.	EPJ-ST 18
13.50	High-rate Behaviour of Iron Ore Pellet	Gustafsson (SW)	EPJ-WoC 05003
14.10	Rate Dependence of Electrical and Mechanical Properties of Conductive Polymer Composites	J. Foley (USA)	EPJ-WoC 05005
14.30	Blast Impact Behaviour of High Performance Fibre Reinforced Concrete	M. Drdlova (CZE)	EPJ-WoC 05006
14.50	Experimental Analysis and Constitutive Modelling of Steels of A-IIIN Strength Class	L. Kruszka (POL)	EPJ-WoC 05007
15.10	Behaviour of a Birch Plywood Under Various Experimental Conditions	L. Caetano (FRA)	EPJ-WoC 05010
15.30	Coffee Break		
	Session 7 "Modelling and Numerical Simulation 2"	***Chairmen: E. Buzaud, A. Clausen***	
16.00	Impact Protection Behavior of a Mordenite Zeolite System	J. Xu (CHN)	EPJ-ST 13
16.20	Development of a Numerical Model for the Ballistic Penetration of Fackler Gelatine by Small Calibre Projectiles	L. Gilson (BE)	EPJ-ST 14
16.40	On What Controls the Spacing of Spontaneous Adiabatic Shear Bands in Collapsing Thick-Walled Cylinders	Z. Lovinger (ISR)	EPJ-WoC 04054
17.00	Flow and Failure of an Aluminium Alloy From Low to High Temperature and Strain Rate	R. Sancho (SPA)	EPJ-WoC 04055
17.20	Strain-rate Dependence for Ni/Al Hybrid Foams	A. Jung (DE)	EPJ-WoC 04030
17.40	Multiaxial Behavior of Foams - Experiments and Modeling	L. Maheo (FR)	EPJ-WoC 04035
18.00	Numerical Investigations on Pressurized Al-Composite Vessel Response to Hypervelocity Impacts: Comparison Between Experimental Works and a Commercial Code	J. Mespoulet (FR)	EPJ-WoC 04042

WEDNESDAY SEPTEMBER 9TH 2015

	Session 8 "Experimental Technique 4"	***Chairmen: G. Gray III, L. Kruszka***	
8.00	Study of Phase Transitions in Cerium in Shock-Wave Experiments	M. Zhernokletov (RUS)	EPJ-WoC 01076
8.20	Limits of Rotating Wheel and SHPB Systems for Dynamic Fracture Testing	B. Erice (FR)	EPJ-WoC 01079
8.40	Experimental Issues and Interpretation of the Necking Phenomena in the Dynamic Characterization Via Hopkinson Bar	G. Mirone (IT)	EPJ-WoC 01002
9.00	A Novel Technique for Performing Symmetric Taylor Impact	S. Walley (UK)	EPJ-WoC 01029
9.20	Effect of Strain Rate on Shear Properties and Fracture Characteristics of DP600 and AA5182-O Sheet Metal Alloys	T. Rahmaan (CAN)	EPJ-WoC 01033
9.40	Determination of Dynamic Fracture Toughness Using a New Experimental Technique	C. Cady (USA)	EPJ-WoC 01012
10.00	Coffee Break		
	Session 9 "Modelling and Numerical Simulation 3"	***Chairman: K. Ramesh, Q. Li***	
10.30	Field Tests and Computational Simulations of the Explosion of Buried Charges	E. Roger (FRA)	EPJ-WoC 04004
10.50	Development of a Strain Based Failure Criterion for the Multi-Constituent Composite Model Under Shock Loading	S. Schumacher (USA)	EPJ-WoC 04001
11.10	Perforation of Welded Aluminum Extrusions: Numerical Prediction and Experimental Validation	J.K. Holmen (NO)	EPJ-WoC 04015
11.30	Theoretical Study of the Porosity and Temperature Effects on the Shock Response of Graphitic Materials	N. Pineau (FR)	EPJ-WoC 04037
11.50	Announcements		
12.00	Group Photo		
12.20	Lunch Break		
	Conference Tour		
13.45	Bus Departure		
19.30	***Conference Tour Dinner in Airolo***		
22.30	Arrival in Lugano at the Congress Palace		

THURSDAY SEPTEMBER 10TH 2015

	Session 10 "Experimental Technique 5"	***Chairmen: S. Walley, H. Kobayashi***	
8.00	Dynamic Compressive Behavior of Foamed Polyethylene Film	K. Tateyama (JPN)	EPJ-WoC 01038
8.20	The Role of the Modified Taylor Impact Test in Dynamic Material Research	F. Bagusat (DE)	EPJ-WoC 01026
8.40	Experimental Researching on Cylindrical Isentropic Compression by Ultrahigh Magnetic Field	Z. Gu (CHN)	EPJ-WoC 01023
9.00	Experimental Investigation on Shear Fracture At High Strain Rates	C. Roth (FRA)	EPJ-WoC 01078
9.20	Investigating Strength of Materials At Very High Strain Rates Using Magnetically Driven Expanding Cylinders	Z. Lovinger (ISR)	EPJ-WoC 01068
9.40	Dynamic Tensile Stress-Strain Characteristics of Carbon/Epoxy Laminated Composites in Through-Thickness Direction	K. Nakai (JPN)	EPJ-WoC 01039
10.00	Coffee Break		
	Session 11 "Modelling and Numerical Simulation 4"	***Chairmen: H. Couque, T. Børvik***	
10.30	The response of polymethyl methacrylate (PMMA) .... in the intermediate principal stress	T. Holmquist (USA)	EPJ-ST 11
10.50	Hourglass Control for Smooth Particle Hydrodynamics Removes Tensile and Rank-deficiency Instabilities	G.Ganzenmüller (DE)	EPJ-ST 16
11.10	Finite Strain Formulation of Viscoelastic Damage Model for Simulation of Fabric Reinforced Polymers Under Dynamic Loading	S. Treutenaere (FR)	EPJ-WoC 04011
11.30	Using Plastic Instability to Validate and Test the Strength Law of a Material Under Pressure	C. Bolis (FRA)	EPJ-WoC 04053
11.50	Lunch Break Including Poster Session		
	Session 12 "Experimental Technique 6"	***Chairmen: V.-T. Kuokkala, Y. Petrov***	
13.30	Combined effects of the in-plane orientation angle and the loading angle on the dynamic enhancement of honeycombs under mixed shear-compression loading	R. Tounsi (FRA)	EPJ-ST 02
13.50	Dynamic High-Temperature Tensile Characterization of an Iridium Alloy with Kolsky Tension Bar Techniques	B. Song (USA)	EPJ-WoC 01066
14.10	Experimental and Calculated Approach to the Study of Deformation and Strength Characteristics of Elastoviscoplastic Materials by Direct Impact Method	M. Baranova (RUS)	EPJ-WoC 01061
14.30	Experimental Investigation of the Behaviour of Tungsten and Molybdenum Alloys At High Strain-Rate and Temperature	M. Scapin (IT)	EPJ-WoC 01021
14.50	Why Does Necking Ignore Notches in Dynamic Tension?	D. Rittel (ISR)	EPJ-WoC 01013
15.10	The Compressive Behaviour and Constitutive Equation of Polyimide Foam in Wide Strain Rate and Temperature Range	A. Yoshimoto (JPN)	EPJ-WoC 01047
15.30	Coffee Break		
	Session 13 "Biomechanics"	***Chairmen: E. Markiewicz, C. Siviour***	
15.50	Evaluation of the Performance of Rubber-Like Elastomers and Highly Compressible Foams as Chest Protectors for Baseball Players	N. Thota (AUS)	EPJ-ST 10
16.10	A Preliminary Investigation of the Dynamic Viscoelastic Recovery of Bovine Cortical Bone	T. Cloete (ZAF)	EPJ-WOC 03004
16.30	Intermediate Strain Rate Behaviour of Cancellous Bone: Links Between Microstructural and Mechanical Properties	M. Prot (FRA)	EPJ-WOC 03006
17.00-18.30	***General Assembly (members Only)***		
	Social Event		
19.30	Concert at the Palace Congress Theatre		
20.45	Conference Dinner at the Palace Congress		

FRIDAY SEPTEMBER 11TH 2015

	Session 14 "Modelling and Numerical Simulation 4"	***Chairmen: N. Bahlouli, D. Mohr***	
8.00	Spherical Cavity Expansion Theory for the Penetration of Finite Targets	M. Buchely (COL)	EPJ-ST 15
8.20	Transitioning a Unidirectional Composite Computer Model From Mesoscale to Continuum	S. Chocron (USA)	EPJ-WoC 04048
8.40	Modeling Fragmentation with New High Order Finite Element Technology and Node Splitting	J. Limido (FRA)	EPJ-WoC 04050
9.00	The Theoretical Analysis and Numerical Simulation of the Metal Jet Incoherence	J. Liu (CHN)	EPJ-WoC 04058
9.20	Simulation of High Strain Rate Failure in Electro-Magnetically Loaded Plates	B. Erice (FRA)	EPJ-WoC 04062
9.40	Coffee Break		
	Session 15 "Microstructural Effects 2"	***Chairmen: T. Cloete, L. Peroni***	
10.10	Shock Compression of [001] Single Crystal Silicon	S. Zhao (USA)	EPJ-ST 09
10.30	Strength and Failure of a Damaged Material	E. Cerreta (USA)	EPJ-WOC 02015
10.50	Static and Dynamic Tensile Behaviour of Aluminium Processed by High Pressure Torsion	P. Verleysen (BE)	EPJ-WOC 02012
11.10	Inclusion Effects on the Dynamic Behaviour of Polypropylene Based Composites	N. Bahlouli (FRA)	EPJ-WOC 02025
11.30	Effects of Surface Cracks and Strain Rate on the Tensile Behavior of Balmoral Red Granite	A. Mardoukhi (FIN)	EPJ-WOC 02007
11.50	Concluding Remarks		
12.00	Lunch		
14.00	***End of Conference***		

Posters

1003 ET-001
Digital Image Analysis of ASB-assisted Failure of Impacted Structural Materials
P. Longère, E. Roux, O. Cherrier, T. Millot, D. Capdeville, J. Petit

1004 ET-002
Strain Rate Effects on Reinforcing Steels in Tension
D. Forni, E. Cadoni

1005 ET-003
Recent Developments in Dynamic Testing of Materials
A. Gilat, J. Seidt

1006 ET-004
Estimation of the Restitution Coefficient by Strain Measurement
N. Nishimura, K. Murase, T. Watanabe, K. Niimi, M. Fukuhara

1007 ET-005
Application Backwards Characteristics Analysis Method to Dynamic Response of Metals Under High Pressure
H. Pan, X. Hu, Z. Wu

1008 ET-006
Experimental Study on Dynamic Splitting of Recycled Aggregate Concrete Using SHPB
Y. Lu, Y. Cai, S. Yu

1009 ET-007
Damage Characterization for Particles Filled Semi-Crystalline Polymer
F. Lauro, B. Bennani, G. Haugou,B. Bourel, F. Chaari, R. Balieu, T. Matsumoto, E. Mottola

1011 ET-008
Strain Localization During Tensile Hopkinson Bar Testing of Commercially Pure Titanium and TiAl6V4 Titanium Alloy
W. Moćko, L. Kruszka, A. Brodecki

1014 ET-009
Experimental Studies on the Deformation and Rupture of Thin Metal Plates Subject to Underwater Shock Wave Loading
P. Chen, H. Liu, S. Zhang

1016 ET-010
Dynamic Behaviour of "collapsible" Concrete
A. Caverzan, M. Lamperti Tornaghi, M. Peroni, G. Solomos

1017 ET-011
The Dynamic Virtual Fields Method on Rubbers At Medium and High Strain Rates
S. h. Yoon, C. Siviour

1018 ET-012
Development of a Finite Element Model for the Simulation of Parabolic Impact of Sandwich Panels
S. Guerard, K. R. Ramakrishnan, L. Maheo, K. Shankar, P. Viot

1019 ET-013
High Strain Rate Mechanical Behavior of Magnesium and Its Alloy Under Compressive Loading
Qizhen Li

1020 ET-014
High Strain Rate Response of UHP(FR)C in Compression
A. Bragov, A. Konstantinov, A. Lomunov, D. Forni, G. Riganti, E. Cadoni

1022 ET-015
Influence of the Temperature on the Tension Behaviour of EUROFER97 Alloy At High Strain Rate E. Cadoni, M. Dotta, D. Forni, P. Spätig

1024 ET-016
Failure Stress Criterion for Adhesively Bonded Joint At Different Strain Rates by Using Dynamic Arcan Test Device L. Dufour, B. Bourel, F. Lauro, G. Haugou, N. Leconte, N. Carrere

1025 ET-017
Recording of Particle Velocity Spectrum At the Shock Impact on Different Viscosity Interface of Liquids
A.V. Fedorov, A.L. Mikhailov, S.A. Finyushin, D.A. Kalashnikov, E.A. Chudakov, E.I. Butusov, I.S. Gnutov

1027 ET-018
One Testing Method of Dynamic Linearity of an Accelerometer
L. Jingyu, G. Weiguo, T. Xueming, S. Yunbo

1030 ET-019
Energy Energy Absorption At High Strain Rate of Glass Fiber Reinforced Mortars
L. Fenu, D. Forni,E. Cadoni

1031 ET-020
First Application of the 3D-MHB on Dynamic Compression Behaviour of UHPC
E. Cadoni, M. Dotta, D. Forni, G. Riganti, C. Albertini

1032 ET-021
Experimental Characterization and Macro -Modeling of Mechanical Strength of Multi -Sheets and Multi-Materials Spot Welds Under Pure and Mixed Modes I and II
R. Chtourou, G. Haugou, N. Leconte, B. Zouari, F. Chaari, E. Markiewicz

1034 ET-022
Tensile Behaviour of Geopolymer-based Materials Under Medium and High Strain Rates
C. Menna, D. Asprone, D. Forni, E. Cadoni, G. Roviello, L. Ricciotti, C. Ferone, A. Bozza, A. Prota

1035 ET-023
The Effect of Cutting Speed on Residual Stresses Under Orthogonal Cutting of Ti-6Al-4V Alloys
C. Liu, Z. Q. Wang, G. Zhang, L. Liu

1036 ET-024
Mechanical Behavior of Ultrafine-grained Materials Under Combined Static and Dynamic Loadings
Y. Guo, X.Y. Sun, J.G. Li, X. Yu and Y.L. Li

1037 ET-025
Effect of Strain Rate on Bake Hardening Response of BH220 Steel
A. Das, S. Tarafder, S. S, D. Chakrabarti

1040 ET-026
Experimental Investigation of the Failure Envelope of Unidirectional Carbon-Epoxy Composite Under High Strain Rate Transverse and Off-Axis Tensile Loading
P. Kuhn, M. Ploeckl, H. Koerber

1041 ET-027
Characterization of Unidirectional Carbon Fiber Reinforced Polyamide-6 Thermoplastic Composite Under Longitudinal Compression Loading At High Strain Rate M. Ploeckl, P. Kuhn, H. Koerber

1042 ET-028
Structural-temporal Approach for Dynamic Strength Characterization of Gabbro-Diabase
Y. Petrov, A. Evstifeev, A. Bragov, E. Cadoni

1043 ET-029
Mechanical Response of a Fibre Reinforced Earthen Material Under Static and Impact Loadings
F. Aymerich, L. Fenu, L. Francesconi, P. Meloni

1045 ET-030
Advances in Experimental Assessment of Dynamic Tensile Strength of Concrete by the Spalling Technique
Ahmed Brara

1046 ET-031
Effect of Temperature and Strain Rate on the Compressive Behaviour of Supramolecular Polyurethanes
X. Tang, C. Siviour, C. P. Buckley, A. Feula, W. Hayes

1048 ET-032
Interrupted Pulse Electromagnetic Expanding Ring Test for Sheet Metal
J. Imbert, T. Rahmaan, M. Worswick

1050 ET-033
Inertia in High Strain Rate Tension Testing
M. Hockly, C. Siviour

1051 ET-034
Experimental and Numerical Study of a Bird Strike Against a Windshield
F. Plassard, P. Hereil, P. Joseph, J. Mespoulet

1052 ET-035
Single Rod Impact Tests: Analytical, Experimental, and Modelling Investigation
Y. Huang, C. Siviour

1053 ET-036
Strain Rate Sensitivity of Autoclaved Aerated Concrete From Quasi-Static Regime to Shock Loading
J. Mespoulet, F. Plassard, P. Hereil

1054 ET-037
Vulnerability Analysis of a Pressurized Aluminum Composite Vessel Against Hypervelocity Impacts
P. Hereil, F. Plassard, J. Mespoulet

1055 ET-038
Research of Dynamic Properties of ALLOYS of AMG6BM and AMG6M in SHOCK-WAVE Experiment on a Gas Gun
S. Mokrushin, A. Pavlenko, E. Karnaukhov, D. Kazakov, O. Kozelkov, S. Malyugina

1056 ET-039
Explosive Fragmentations of Alumina(Al2O3) Under Quasistatic Compressive Loading
Q. Zhang, X. Jin, F. Zhou

1057 ET-040
Impact Performance of FRC Slabs Under Various Strain Rates
A. Horska, P. Jiricek, M. Foglar

1058 ET-041
Impact Performance of Specimens Subjected to Fatigue Loading - Experimental Investigations
J. Göringer, M. Foglar, P. Jiricek

1059 ET-042
A Study on Ship Impacting a Flexible Crashworthy Device for Protecting Bridge
Pier L. Yang, J. Liu

1060 ET-043
Effects of Aspect Ratio and Specimen Size on Uniaxial Failure Stress of Iron Green Body At High Strain Rates
Y. Kuroyanagi, T. Ogura, M. Nishida, H. Å. Häggblad, P. Jonsén, G. Gustafsson

1063 ET-044
Two Wave Photon Doppler Velocimetry Measurements in Direct Impact Hopkinson Bar Experiments
L. Lea, A. Jardine

1064 ET-045
Dynamic Behaviour of HPFRCC: The Influence of Fibres Dispersion
A. Caverzan, M. di Prisco, E. Cadoni

1069 ET-046
Strain Rate Effects on Tensile Strength of Iron Green Body
M. Nishida, Y. Kuroyanagi, H. Å. Häggblad, P. Jonsén, G. Gustafsson

1070 ET-047
Investigation of Strength Properties of Freshwater Ice
A. Bragov, L. Igumnov, A. Konstantinov, A. Lomunov, A. Filippov, Y. Shmotin, R. Didenko, A. Krundaeva

1071 ET-048
Experimental Characterization of the Confined Behaviour of Concrete. Influence of Saturation Ratio and Strain-Rate
P. Forquin, E. Piotrowska, G. Gary

1072 ET-049
On the Characterisation of the Dynamic Behaviour of Silicon Carbides Subjected to Ramp Compression Experiments
J. L. Zinszner, B. Erzar, P. Forquin, F. Barthélémy

1074 ET-050
Dynamic Response of Reverse Taylor Impact Based on DIC Technology
J. Liu, A. Pi, H. Wu, F. Huang

1075 ET-051
A Comparative Study on the Restrictions of Dynamic Test Devices
G. Majzoobi, S. Lahmi

1077 ET-052
Determination of Sound Velocities of "overcompressed" Detonation in HMX-based Explosive
A. Kovalev, E. Bogdanov, V. Bel'sky, M. Zhernokletov

1080 ET-053
Effect of Stress State and Temperature on Ductile Fracture At High Strain Rates
S. Marcadet, C. Roth, B. Erice, D. Mohr

2001 ME-001
Mechanism of Grain Refinement and Its Effect on Adiabatic Shear Bands in 4340 Steel and Pure Copper During Impact
N. Bassim, S. Boakye-Yiadom

2002 ME-002
Beryllium Strain Under Dynamic Loading
V. Pushkov, A. Yurlov, A. Okinchits, T. Naydanova

2003 ME-003
The Effects of Grain Size on the Spallation Behavior of Pure Copper Under Plate-Impact Loading
Z.X. Jiang, H. Peng, M.Z. Xing, H.T. Shen, H.L. He, Y.G. Wang

2004 ME-004
An Experimental Investigation of Energy Absorption in TRIP Steel Under Impact Three-point Bending Deformation
H. Pham, T. Iwamoto

2005 ME-005
Characterization of the Impact Behavior of Algotuf Steel in Torsion and in Tension
N. Bassim, S. Boakye-Yiadom, G. Toussaint, M. Bolduc

2008 ME-006
High-power Laser Shock-induced Dynamic Fracture of Aluminum and Microscopic Observation of Recovered Samples
Z. Fan, H. Xiuguang, H. Shu

2009 ME-007
Investigation on Mechanical Behavior of ECAPed 2A12 Aluminum Alloy
C. Wang, C. Zang, L. Wang, Z. Tang, T. Suo

2010 ME-008
When Do Interfaces Become Important for Failure
S. Fensin, E. Cerreta, S. Valone, G. Gray

2011 ME-009
The Effect of Grain Size on Dynamic Tensile Extrusion Behaviour
L. Park, H.J. Kim, S.B. Kim

2013 ME-010
Impact Behavior of an Innovative Plasticized Poly(Vinyl Chloride) for the Automotive Industry
N. Bahlouli, C. Bernard, C. Wagner-Kocher, S. Ahzi, Y. Remond

2014 ME-011
Behavior of Metals Induced by Magnetic Pulse Loading
S. Atroshenko, V. Morozov, D. Gribanov, A. Lukin, Y. Petrov

2016 ME-012
Penny-shaped Crack Propagation in Spallation of Zr-BMGs
Z. Ling, X. Huang, L. H. Dai

2017 ME-013
Effect of Composition on the High Rate Dynamic Behavior of Tungsten Heavy Alloys
L. Kesemen, N. Çalışkan, H. Konokman, N. Durlu

2019 ME-014
Energy Capacity of AM Materials From Observation of the Microstructure
J. Cook, C. Siviour, R. Goodridge

2020 ME-015
Deformation of Zirconium - Niobium Alloy E635 in Sub-Microsecond Shock Waves
S. Malyugina, A. Pavlenko, S. Mokrushin, A. Mayorova, D. Kazakov, O. Kozelkov, S. Balabin

2021 ME-016
Dynamic Properties of Zirconium Alloy E110 Under Sub-Microsecond Shock-Wave Loading
Pavlenko, S. Malyugina, S. Mokrushin, A. Mayorova, D. Kazakov, O. Kozelkov

2022 ME-017
Electronic Phase of Substances. Phase Transitions with Change of Electron and Crystalline Structure
B. Nadykto

2023 ME-018
Microstructure and Local Mechanical Property Evolution During High Strain-rate Deformation of Tantalum
S. Vachhani, N. Mara, V. Livescu, E. Cerreta

2024 ME-019
Dynamic Dehaviour and Martensite Phase Transformation in Near-Beta Ti-5553 Alloy Under High Strain Rate Loadings
S. Vachhani, N. Mara, V. Livescu, E. Cerreta

3001 BM-001
Influence of Strain Rate on the Mechanical Behaviour in Tension of Bovine Cortical Bone
C. Latella, M. Dotta, D. Forni, N. Tesio, E. Cadoni

3002 BM-002
Evaluation of the Performance of Three Elastomers for Non-Lethal Projectile Applications
N. Thota, J. Epaarachchi, A. Lau

3003 BM-003
Dynamic Compressive Properties of Bovine Knee Layered Tissue
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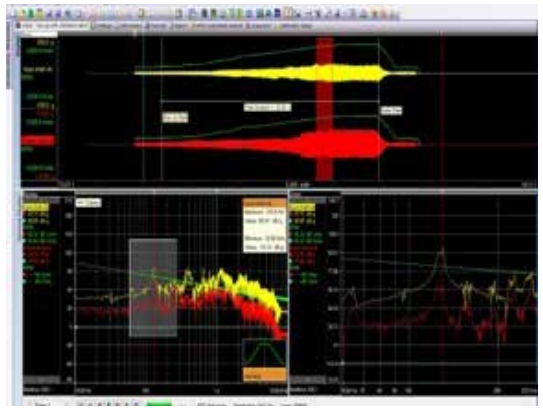

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