

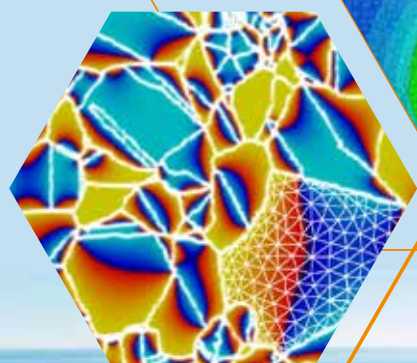
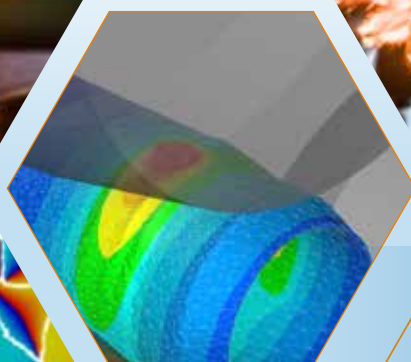


14th International Conference on the Technology of Plasticity

September 24-29,
2023

BAY
OF CANNES

Mandelieu-La Napoule
Congress Center
France



Program Book



ictp2023.org

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14th International Conference on the Technology of Plasticity





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1. Welcome message

For the 1st time in its 40-year long history, the International Conference on the Technology of Plasticity lands in France for its 14th edition. After challenging years of restrictions to online events, it is our great pleasure and honor to welcome all our guests, on site, for this new edition in Mandelieu – La Napoule on the French Riviera.

This 14th edition is co-organized by two of France's most prestigious engineering schools: Mines Paris PSL and Arts et Métiers. Created in 1783 and 1780 respectively, these two institutions are recognized for their active industry-oriented research activities.

Rooted in a long tradition of excellence, the International Conference on the Technology of Plasticity, often referred to as the "Olympic Games of Metal Forming", is not only a conference showcasing the latest scientific achievements. It is also a place where a bridge is built between fundamental science and real-world industrial applications. By bringing together international scientists and engineers from across industry, academia, and government we not only have the opportunity to share our latest results, but we can also brainstorm solutions that this ICTP community can provide to answer major challenges in industry, society and the environment. Indeed, research and development in metal forming transcend the goal of enhancing productivity, optimizing component properties, or reducing production costs. They play a pivotal role in addressing the energy transition and sustainable development imperatives that will shape our industry and our society in the coming decades.

For this 14th edition, more than 510 abstracts were submitted from 35 different countries. After a rigorous reviewing process, 370 contributions were accepted for oral communications and 34 for poster session. The full paper proceedings are available online through Springer Proceedings Series during the conference. This edition introduces dedicated Minisymposia (MS), to honor and celebrate Professors with outstanding contributions to our community. The MS Lang session pays tribute to our late colleague **Professor Li Hui Lang** for his pioneering contributions in hydroforming and powder hot isostatic pressing. With more than 60 contributions, **Professor Frédéric Barlat's** MS underscores the community's recognition of his groundbreaking work. In addition to seven visionary plenary talks, we will also host two interactive plenary workshops. These workshops are dedicated to the growing integration of data science in materials & manufacturing, and to the challenges and opportunities that material forming industries face in their journey towards achieving zero-emission objectives. The 2023 JSTP International Prize for Research & Development in Precision Forging will again be awarded by the Japanese Society of Technology of Plasticity (JSTP), alongside a new JSTP prize for Young Researchers, to be awarded for the first time.

As the organizers, we extend our heartfelt gratitude to all individuals and institutions that have supported us in orchestrating this event. Our foremost thanks go to the authors for their excellent contributions and active participation. We wish to express our warm appreciation to our dedicated reviewers, who carefully and constructively evaluated all the submitted papers. We are also grateful to the members of the ICTP International Scientific Committee and the Standing Advisory Board for their insightful guidance. Finally, let us thank our generous sponsors, whose substantial support has been instrumental in hosting this international event in such good conditions and in such a beautiful place.

We are very excited to organize an event that marks our return to in-person gatherings after an extended period of "virtual events". The sunny shores of the French Riviera provide the perfect backdrop to engage in this scientific event and to discover the beauty and charm of France. Please enjoy the conference and take advantage of this opportunity to share new ideas, discuss challenging applications and set up new collaborations.

Welcome to the 14th ICTP conference!



- Pierre-Olivier Bouchard -
Mines Paris | PSL Research University
CEMEF



- Katia Mocellin -
Mines Paris | PSL Research University
CEMEF



- Régis Bigot -
Arts et Métiers Institute of Technology
LCFC



- Tudor Balan -
Arts et Métiers Institute of Technology
LCFC

2. Partners & Sponsors

Silver Sponsors



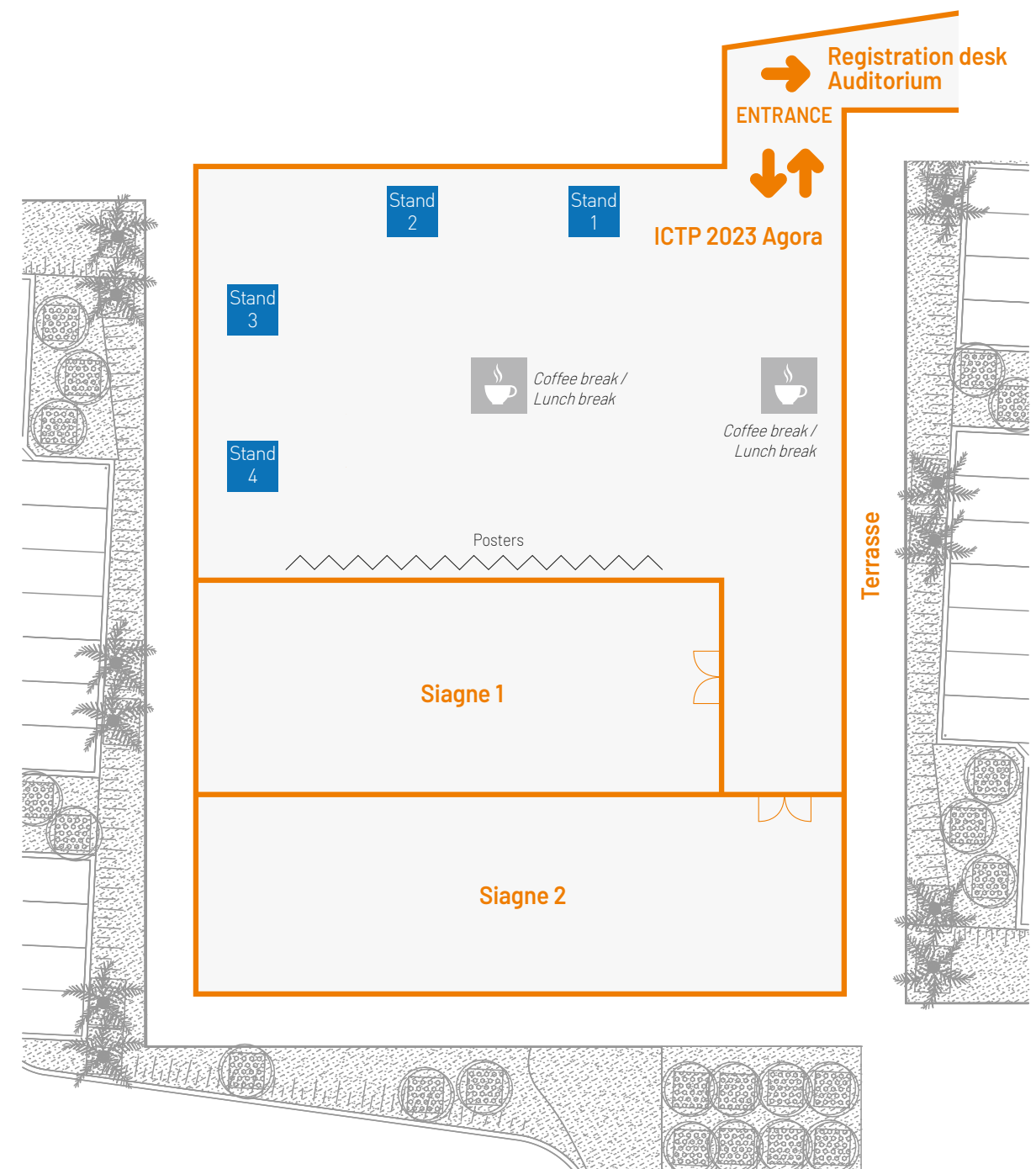
Exhibitors



With the support of (Institutions / Associations)



Exhibition plan:



3. Committees

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Katia Mocellin , Mines Paris I PSL Research University- CEMEF
Régis Bigot , Arts et Metiers Institute of Technology - LCFC
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Odd Sture Hopperstad , Norwegian University of Science and Technology (Norway)
Yan Huang , Brunel University London (U.K.)
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Y.T. Im , Korea Advanced Institute of Science and Technology (Korea)
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Shohei Kajikawa , The University of Electro-Communications (Japan)
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Myoung-Gyu Lee , Seoul National University (Korea)
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Andrzej Rosochowski , University of Strathclyde Glasgow (UK)
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Beatriz Silva , Tecnico Lisboa (Portugal)
Andreas Sterzing , Fraunhofer IWU (Germany)
Erman Tekkaya , Technische Universität Dortmund (Germany)
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Sébastien Thibaud , FEMTO-ST Institute (France)
Hiroshi Utsunomiya , Osaka University (Japan)
Ton van den Boogaard , University of Twente (Netherlands)
Wolfram Volk , Technical University of Munich (Germany)
Zhigang Wang , Gifu University (Japan)
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Jeong Whan Yoon , Korea Advanced Institute of Science and Technology (Korea)
Yoshinori Yoshida , Gifu University (Japan)
Shi-Hong Zhang , Chinese Academy of Sciences (China)
Gwoqun Zhao , Shandong University (China)
Zhenshan Cui , Shanghai Jiao Tong University (China)

Local organizing team

Cyrille Baudouin, Madeleine Bignon, Daniel Boehm, Quentin Bourget, Sébastien Burgun, Léa Cailly-Brandstätter, Romain Castellani, Joséphine Chatellier, Sandra Chevret, Camille Durand, Valentin Duvivier, Cynthia Elhaji, Simon Fays, Alexandre Fendler, Pauline Hahn, Zichen Kong, Claude Korolakina, Sélim Kraria, Imène Lahouij, Laurent Langlois, Zixuan Li, Ludivine Maccioni, Philippe Mangin, Stéphane Mathieu, Aya Midaoui, Florence Morcamp, Adam Nassif, Daniel Pino Munoz, Antonio Potenciano, Heyu Song, David Uribe.

4. General Information

Conference Venue

Mandelieu-La Napoule Congress and Exhibition Center
836 boulevard des écureuils
06210 Mandelieu-La Napoule – France

Registration and Information Desk

The registration and information desk for the conference is located on the ground floor of conference venue “Mandelieu-La Napoule Congress and Exhibition Center”:

Opening hours:

Monday to Thursday: 07:30 am – 07:00 pm

A member of the local organizing team will be present in each conference room during the entire conference. You can easily identify the members of the local organizing team thanks to their blue lanyards and orange badges. Do not hesitate to get in touch with them for any questions!

Name Badges

The name badges are to be worn visibly during the entire conference. Your personal badge sheet will be sent to you by e-mail prior to the conference. Please make sure that you print your own badge sheet on A4 paper before you attend the conference and bring it with you. The badge holder will be provided at registration.

How to get there from Nice Côte d’Azur International airport :
You can take the bus from the Airport Terminal 2 at the Arrivals level, in front of gates A1 to A3, platform 4 (see map below):

There are two bus lines that can lead you to Mandelieu, both leaving from platform 4:

Line 60 (from Nice to Aix-en-Provence)

Line 90 (from Nice to Saint-Raphaël)

Pre-booking possible online. You can also buy your bus ticket on-board with only 0.40€ surcharge.

The departure times are listed in the table below. The journey will take about 40 minutes.

Line 60		Line 90
06:15 am	01:15 pm	09:00 am
07:55 am	02:15 pm	11:30 am
09:15 am	04:15 pm	01:30 pm
10:30 am	05:20 pm	03:45 pm
12:45 pm	05:45 pm	07:30 pm
		09:30 pm

Get off the bus at Gare Routière de Mandelieu, Mandelieu-la-Napoule. The bus station is less than a 200m walk from the Tourist Office, the Congress Center, or Hotel Ibis Cannes Mandelieu.

• **Bus company:** ZOU! LER

Line 60 (Line from Nice to Aix-en-Provence) – 40 min

Take the line 60 from Aéroport Terminal 2, Nice

Stop at Gare Routière de Mandelieu, Mandelieu-la-Napoule

Line 90 (Line from Nice to Saint Raphaël) – 40 min

Take the line 90 from Aéroport Terminal 2, Nice

Stop at Gare Routière de Mandelieu, Mandelieu-la-Napoule

80 seats per bus

• **By train**

– Mandelieu-la-Napoule train station (second line train)

Location : <https://m.ter.sncf.com> (40’ walking)

– Cannes train station (main line train)

Location : <https://m.ter.sncf.com> (15’ driving)

Information : <https://www.sncf-connect.com/>

• **By bus**

→ **Bus from Cannes SNCF train station**

In front of the Cannes train station, head to platform I (out of the 14 bus platforms available). Platforms A and B are on the right-hand side as you exit the train station, while platforms M-N are on the left. Platform I is in-between, on the left side. The ‘Palm Express A’ bus departs every 25 minutes from this platform. Please ensure you board the ‘Palm Express A’ as there are multiple ‘Palm’ bus lines.

Once aboard, alight at the ‘Gare Routière de Mandelieu’ station. Please note that the bus makes approximately 30 stops in between. The ‘Gare Routière de Mandelieu’ station is a 2-minute walk from the Conference Centre.

→ **Local bus**

From Monday to Saturday, departure every 12 minutes

Sunday, departure every 25 minutes

→ **Conference shuttles**

For your convenience, shuttle services are available between the main hotels and the CEC conference center. Alternatively, it is about a 15-minute walk to the conference center.

– Shuttle meeting points are as follows:

For guests staying at Hotel Goelia, Hotel Zenitude Confort, Hotel Casa

– Rose, Hotel Îlot du Golf, and Motel Capsol:

Meeting Point: Bus station ‘Berges de la Siagne’

For guests staying at Hotel Pullman and Hotel Ermitage de l’Oasis:

Meeting Point: In front of Hotel Pullman

– For guests staying at Hotel Mercure:

Meeting Point: In front of Hotel Mercure

Monday, 25th:

• Departure timetable from hotels to Conference Center: 07:30 am – 08:00 am

• Departure timetable from Conference Center to hotels: 06:30 pm – 07:00 pm

Tuesday, 26th:

• Departure timetable from hotels to Conference Center: 07:30 am – 08:00 am

Wednesday, 27th:

• Departure timetable from hotels to Conference Center: 08:30 am – 09:00 am

• Departure timetable from Conference Center to hotels: 06:40 pm – 07:10 pm

Thursday, 28th:

• Departure timetable from hotels to Conference Center: 07:30 am – 08:00 am

• Departure timetable from Conference Center to hotels (after Farewell party): 07:30 pm – 08:30 pm – 09:30 pm

Friday, 29th:

• Departure timetable from hotels to Conference Center: 07:00 am – 07:15 am



→ **In & Out transfer**

To arrange your return transfer to the airport or train station using the paid shuttle service, please take note of the following:

A service desk will be available at the Welcome desk during the following hours:

• Monday: 11:00 am to 01:30 pm

• Tuesday: 12:30 pm to 02:00 pm

Alternatively, you can book your transfer online at <https://booking.easytransferriviera.com/ictp2023/>.

Please keep in mind that all services must be booked a minimum of 48 hours in advance. This ensures a smooth and timely arrangement for your transfer.

Contact Flash Azur : Stéphane +33 782 923 685

Medical Assistance

If medical assistance is required, please contact the reception desk or a member of the ICTP Team.

Smoking Policy

Smoking is prohibited inside the Congress Center. Smokers are permitted to smoke outside the building.

Cannes & Mandelieu tourist information:

www.mandelieu-tourisme.com/activites/

5. Traveller information

Local time

France is located in the “Central European Time + 1 hour” (CET+1) time zone, and it operates with daylight saving time.

Thus there is a time difference of :

–9h with Los Angeles,

–6h with New York,

–5h with Sao Paulo,

–1h with Lisbon and London,

+3,5 with New Delhi,

+6h with Beijing

+7h with Seoul and Tokyo.

Electricity supply

In France, Type E electricity plugs are used (two round pins and one receptacle with male grounding pin); you will need an adaptor to charge computers, phones, tablets and other electrical equipment. France supply is 220V 50Hz.



WIFI CEC

Network :
ICTP CONGRESS

Password :
#ICTP2023

WIFI IBIS room

Open network – no password

Contact / Organization

QUINZE MAI
CONCEPTEUR D'ÉVÉNEMENTS

1 rue Augustine Variot
92240 Malakoff
France

Onsite at the CEC welcome desk :

Monday to Thursday: 07:30 am – 07:00 pm

Money matters

«The local currency in France, as in most of Europe, is the euro (€). Payment with cards or mobile phones is very common in France, accepted in shops, hotels, restaurants, and more. It's worth noting that small shopkeepers often set a minimum purchase amount to accept card or mobile payments.

You can obtain cash from ATMs, which often offer favorable exchange rates. Airports and areas near the Congress Centre (the closest being at La Banque Postale, 590 avenue de Cannes) have ATMs readily available. Virtually all ATMs in France accept MasterCard and Visa, and many are connected to the Cirrus and Plus systems. American Express also has ATMs in major cities. Most French ATM keyboards use numbers only, so if your PIN contains letters, remember the number equivalents. Four- and five-digit PINs are acceptable in France.

Restaurants in France typically charge for meals in one of two ways. A ‘menu’ includes two or three courses (with cheese and/or dessert, and sometimes a half-bottle of wine) for a set price. Alternatively, you can order items ‘à la carte,’ which is generally more expensive. Tipping is not mandatory in French restaurants because service charges are usually included in the prices. However, if you enjoyed the meal and/or the service, it's customary to tip the waiter, usually up to 10% of the bill.»

6. Information for Oral Presentations

Please check the date and time of your presentation in the program book. All speakers should be present in the session room at least 10 minutes before the start of the session and inform the session chair about their arrival. The presentation has to be submitted beforehand at the Preview room (see below). The official language of the 14th ICTP is English. No simultaneous translation will be offered. All session rooms are equipped with computer projection. A session assistant will be available if help is needed

• Presentation timings

The time allocation for speakers is as follows:

- Plenary lecture: 45 minutes including discussion
- Keynote presentation : 30 minutes presentation + 10 minutes discussion
- Regular presentation : 15 minutes presentation + 5 minutes discussion

Please keep your presentation time as stated to permit discussion. The session chairpersons are requested to strictly keep the time schedule and close presentations if required.

• Preview room – presentations upload

Presentation files must be delivered to the conference Preview room at least half a day prior to the presentation. Regarding Monday presentations, the speakers are asked to come as early as possible on Monday morning to upload and check their presentations. A brief technical check will be conducted by our IT-team. It is not possible to upload the presentation files in the session rooms. Speakers will not be permitted to connect their own computers to the conference projection system.

All presentations are sent directly from the preview room to each of the conference rooms.

• Format requirements

In order for your presentation to run properly, you need to follow these instructions for setting up your presentation.

- Your electronic presentation can be displayed in a MS Windows environment using MS PowerPoint (2000/2003 or 2007/2010) or using Adobe Portable Document Format (*.pdf)
- Please use standard Windows fonts only
- The following video container formats are supported: *.wmv, *.mpg or *.mpeg. The video files should be put in the same folder as the presentation file. Note that video resolutions higher than DVD-Video (720 x 576 dpi) cannot be supported
- Please prepare your Powerpoint respecting 16:9 format. You are free to design your Powerpoint according to your preferences (there is no template).
- You can download the ICTP logo here : <https://www.ictp2023.org/upload/template/TETIERE.pdf>

7. Workshops

In addition to the traditional scientific themes associated with the ICTP conferences, the 2023 edition of ICTP will give the opportunity to highlight specific topics that we believe are particularly important for our community in the years to come.

These topics will be addressed through 2 Workshops in plenary sessions organized as Panel Discussions. These panel discussions will be led by a chairperson and will involve 3 additional experts in the field who will share their respective visions and interact with the attendees.

WORKSHOP 1

Tuesday 26th

- 02:00 pm - 02:45 pm -
- Room : Auditorium -

Towards a paradigm shift related to the ever increasing use of data science in materials & manufacturing?

Chairwoman:

- Jian CAO (Northwestern University, USA)

Experts:

- Peter GROCHE (TU Darmstadt, GERMANY),
- Jose ALVES (TRANSVALOR, FRANCE),
- Dirk MOHR (ETH Zurich, SWITZERLAND)

WORKSHOP 2

Wednesday 27th

- 02:00 pm - 02:45 pm -
- Room : Auditorium -

Challenges and opportunities of material forming industries towards zero emission objectives

Chairman:

- Yvan CHASTEL (RENAULT, FRANCE)

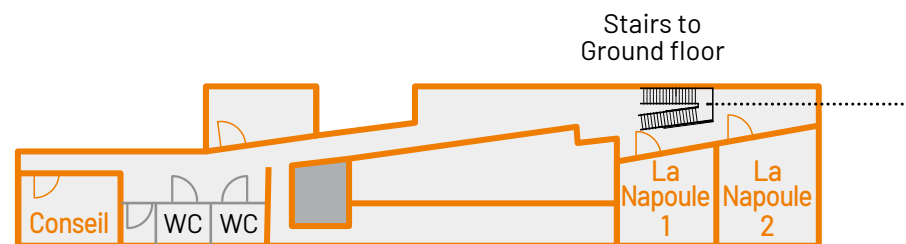
Experts:

- Julian ALLWOOD (University of Cambridge, UK),
- Anne-Laure LAFLY (AIRBUS, FRANCE),
- Philippe ANTOINE (ArcelorMittal, FRANCE)

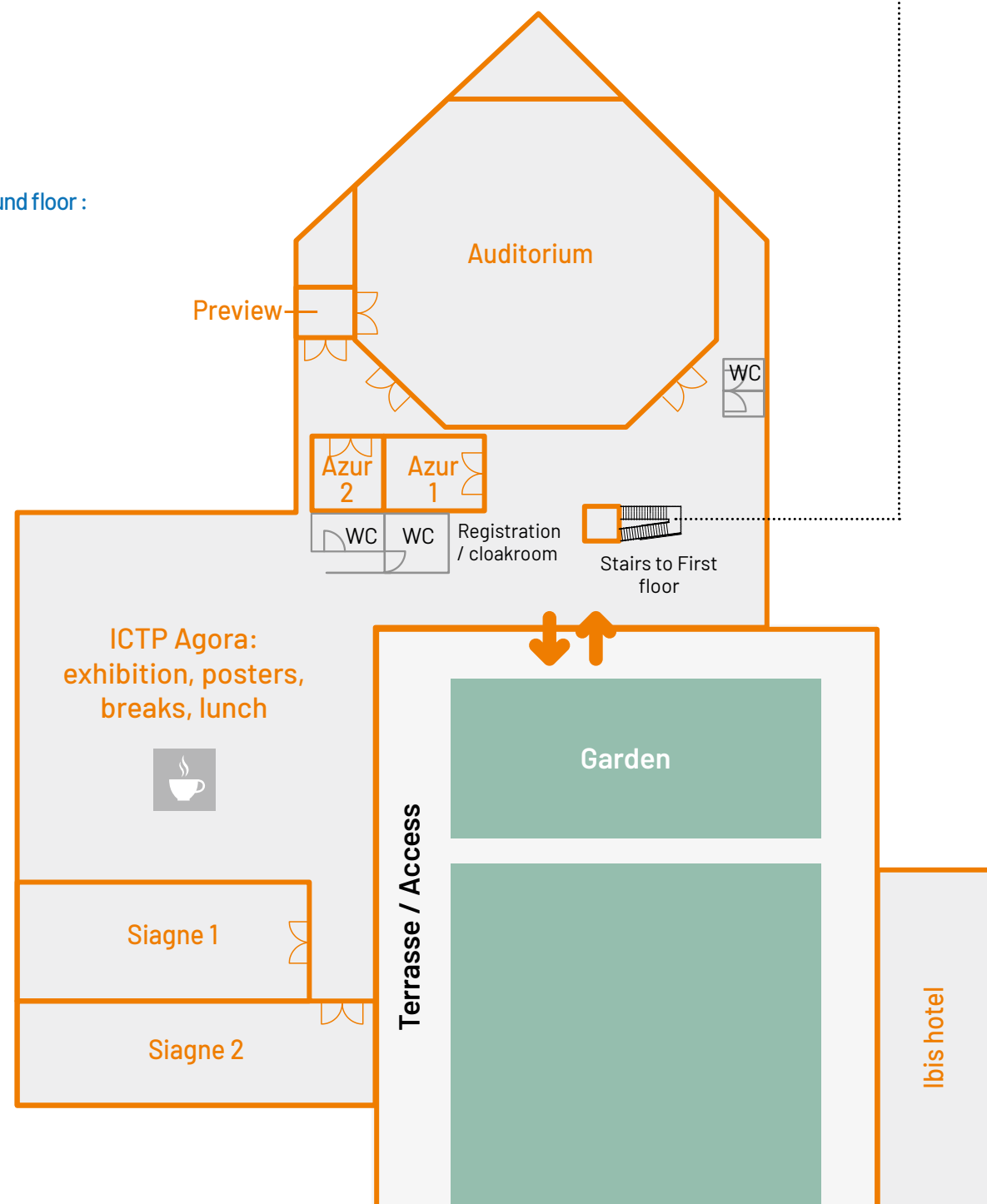
We expect lively and insightful discussions thanks to the expertise of our speakers who come from different worlds and may have different visions on these topics. These workshops will also leave space for discussions, and we hope for active interaction with the attendees.

8. Conference Layout

First floor :



Ground floor :



9. Conference Program

September 24-29, 2023

MONDAY	Auditorium	Azur 1	Azur 2	Siagne 1	Siagne 2	IBIS	Conseil	La Napoule 1	La Napoule 2
08:00 am	Registration								
09:00 am	Opening Ceremony (including JSTP Prize for Precision Forging Announcement)								
10:00 am	Plenary • Speaker: Jian CAO / Chair: Marion MERKLEIN (Germany)								
10:45 am	Coffee break								
11:10 am - 12:10 am	SYMPOSIUM - BARLAT	JOINING	TRIBOLOGY	EXTRUSION	SHEET FORMING	MICROSTRUCTURE EVOLUTION	AI / DATA SCIENCE	DAMAGE & FRACTURE	INCREMENTAL FORMING
12:30 am	Lunch • Sponsored by AIRBUS								
2:00 pm	Plenary • Speaker: Toshihiko KUWABARA (Japan) / Chair: Jun YANAGIMOTO (Japan)								
2:55 pm - 4:15 pm	SYMPOSIUM - BARLAT	JOINING	TRIBOLOGY	EXTRUSION	SHEET FORMING	MICROSTRUCTURE EVOLUTION	AI / DATA SCIENCE	DAMAGE & FRACTURE	INCREMENTAL FORMING
4:15 pm	Coffee break								
4:45 pm - 6:05 pm	SYMPOSIUM - BARLAT	JOINING	TRIBOLOGY	EXTRUSION	SHEET FORMING	MICROSTRUCTURE EVOLUTION	TUBE FORMING	DAMAGE & FRACTURE	INCREMENTAL FORMING

TUESDAY	Auditorium	Azur 1	Azur 2	Siagne 1	Siagne 2	IBIS	Conseil	La Napoule 1	La Napoule 2
08:30 am	Plenaries • Speaker: Bernd-Arno BEHRENS (Germany), Sandrine THUILLIER / Chair: A. Erman TEKKAYA (Germany)								
10:00 am	Coffee break								
10:30 am - 12:30 am	SYMPOSIUM - BARLAT	JOINING	EXPERIMENTAL CHARACTERISATION	EXTRUSION	SHEET FORMING	MICROSTRUCTURE EVOLUTION	BLANKING / SHEARING	DAMAGE & FRACTURE	INCREMENTAL FORMING
12:30 am	Lunch • Sponsored by AUBERT & DUVAL								
2:00 pm	Workshop: Towards a paradigm shift related to the ever-increasing use of data science in materials & manufacturing?								
3:00 pm - 4:30 pm	SYMPOSIUM - BARLAT	JOINING	EXPERIMENTAL CHARACTERISATION	FORGING	SHEET FORMING	MICROSTRUCTURE EVOLUTION	ROLLING	DAMAGE & FRACTURE	CONSTITUTIVE MODELING
4:30 pm	Departure for Nice (banquet)								

WEDNESDAY	Auditorium	Azur 1	Azur 2	Siagne 1	Siagne 2	IBIS	Conseil	La Napoule 1	La Napoule 2
09:30 am	Plenary • Speaker: Julian ALLWOOD (United Kingdom) / Chair: Paulo MARTINS (Portugal)								
10:25 am - 11:25 am	SYMPOSIUM - BARLAT	EXTRUSION	TUBE FORMING	FORGING	SHEET FORMING	MICROSTRUCTURE EVOLUTION	ROLLING	EXPERIMENTAL CHARACTERISATION	CONSTITUTIVE MODELING
11:25 am	Coffee break								
11:40 am - 12:30 am	Posters session								
12:30 am	Lunch • Sponsored by SAFRAN & SAFRAN TECH								
2:00 pm	Workshop: Challenges and opportunities of material forming industries towards zero emission objectives								
2:55 pm - 4:15 pm	SYMPOSIUM - BARLAT	SYMPOSIUM - BARLAT	TUBE FORMING	FORGING	SHEET FORMING	MICROSTRUCTURE EVOLUTION	ROLLING	BENDING	CONSTITUTIVE MODELING
4:15 pm	Coffee break								
4:45 pm - 6:25 pm	SYMPOSIUM - BARLAT	SYMPOSIUM - BARLAT	TUBE FORMING	FORGING	SHEET FORMING	MICROSTRUCTURE EVOLUTION	ROLLING	BENDING	CONSTITUTIVE MODELING

THURSDAY	Auditorium	Azur 1	Azur 2	Siagne 1	Siagne 2	IBIS	Conseil	La Napoule 1	La Napoule 2
08:30 am	Plenaries • Speaker: Pierre MONTMITONNET (France), Ming Wang FU / Chair: Elisabeth MASSONI (France)								
10:00 am	Coffee break								
10:30 am - 12:10 am	SYMPOSIUM - BARLAT	SYMPOSIUM - BARLAT	SYMPOSIUM - LANG	FORGING	SHEET FORMING	MICROSTRUCTURE EVOLUTION	ROLLING	ADDITIVE MANUFACTURING	CONSTITUTIVE MODELING
12:30 am	Lunch • Sponsored by TRANSVALOR								
2:00 pm	JSTP prizes for Precision Forging • Chair: Kazuhiko Kitamura (Japan)								
3:05 pm - 4:25 pm	SYMPOSIUM - BARLAT	SYMPOSIUM - BARLAT	SYMPOSIUM - LANG	FORGING	SHEET FORMING	MICROSTRUCTURE EVOLUTION	ROLLING	BENDING	CONSTITUTIVE MODELING
4:50 pm	Closure ceremony (including JSTP Award for Young Researchers by Chair T Kuboki and ICTP 2026 announcement)								
5:30 pm	Farewell Party								

08:00 am	Registration			
09:00 am	OPENING CEREMONY (including JSTP Prize for Precision Forging Announcement), chairs:T. Kuboki & K. Kitamura)			
10:00 am	PLENARY LECTURE: Jian Cao, «Machine Learning in Advancing Metal Processing Technologies», chair: Marion Merklein			
10:45 am	Coffee break			
	Auditorium	Azur 1	Azur 2	Siagne 1
11:10 am	SYMPOSIUM - BARLAT • Chair: Farhang Pourboghra	JOINING • Chair: François Bay	TRIBOLOGY • Chair: Laurent Dubar	ICTP-436 - Comparison of Stationary and Movable Valves for Continuous Hot Extrusion. J. Gebhard, A. Schulze, A. Erman Tekkaya
11:30 am				ICTP-263 - Simulative model for the feasibility study and stress analysis of full dense rods and pipes produced by FSE. S. Bocchi, G. D'Urso, C. Giardini
11:50 am				ICTP-331 - Processability of Mg-Gd powder via friction extrusion. L. Rath, C. Chan, U. Suhuddin, H. Buresch, T. Ebel, B. Klusemann
12:10 am	ICTP-657 - Efficient thermo-mechanical modelling of cyclic loading with Chaboche type constitutive law coupled with damage. L. Duchêne, H. Morch, C. Rojas-Ulloa, V. Tuni-netti, A.M. Habraken	ICTP-535 - Optimization of Teeth Shape for Serration Joining. K. Kitamura, H. Inishi	ICTP-215 - Identification of Friction Coefficient in Aluminum Forming Processes at High Temperature. P. Soranansri, A. Dubois, P. Moreau, L. Dubar	ICTP-153 - Tool structure optimization for hot extrusion of large aero-engine fan shaft. Z. Liu, X. Xiao, W. Zhou, Z. Wang, J. Zhou
12:30 am	Lunch • Sponsored by AIRBUS			

Registration				
OPENING CEREMONY (including JSTP Prize for Precision Forging Announcement), chairs:T. Kuboki & K. Kitamura)				
PLENARY LECTURE: Jian Cao, «Machine Learning in Advancing Metal Processing Technologies», chair: Marion Merklein				
Coffee break				
Siagne 2	IBIS	Conseil	La Napoule 1	La Napoule 2
SHEET FORMING • Chair: Elisabeth Massoni	MICROSTRUCTURE EVOLUTION • Chair: Warren Poole	AI / DATA SCIENCE • Chair: Yoshinori Yoshida	DAMAGE & FRACTURE • Chair: Carl Labergere	ICTP-193 - On the relevance of modeling options in ABAQUS regarding the spinning process simulation. A.-E.C. Korolakina, P.-O. Bouchard, K. Mocellin, A. Mehdi Roula, A. Lepied, S. Van Der Veen
				ICTP-638 - Stress relief in WAAM SS316L flow-formed tube. G. Gleb Goviazin, D. Rit-tel, A. Shirizly
				ICTP-800 - Microstructure evolution during flowforming of Inconel 718. E.Hazemann, C. Srecki, A. Thealler, D. Cardinaux, K. Mocellin, P.-O. Bouchard, C. Moussa
ICTP-392 - Experimental studies of necking and fracture strain limits of medium-Mn steel sheet under hot stamping conditions. C. Tong, R.Zhang, D. Xu, Z. Shi	ICTP-696 - Influence of active recovery and initial microstructures on metadynamic recrystallization of 5083 aluminum alloy. S. Ding, L. Zhan, M. Huang, J. Yanagimoto	ICTP-314 - Machine Learning-Based Feature Evaluation for Scrap Float Detection. T. Ohashi	ICTP-472 - Advancements in the simulation of 3D ductile damage transition to fracture with FORGE®. J. Alves, H. El-dahshan, U. Ripert, R. Ducloux, D. Munoz, P.-O. Bouchard	ICTP-411 - Generating Forming Limit Curves for Stainless Steel Foil Based on a Modified Nakajima Set Up. J. Sommer
ICTP-252 - Tailoring the hardness in multi-stage press hardening of 22MnB5 sheet material in a progressive die. J. Martschin, M. Wrobel, J. Grodotzki, A. E. Tekkaya	ICTP-767 - Interaction between S-phase precipitates and dislocation sub-structures in AA2024 (Al-Cu-Mg family). D. Irmer, V. A. Esin, M. Sennour, C. Moussa	ICTP-559 - A novel deep-learning-based platform to optimise tool surfaces and process settings for spring-back compensation. H. Reza Attar, L. Zhu, N. Li	ICTP-285 - Characterization of Fracture Forming Limits Through Radial Extrusion. R. Sampaio, J. Pragana, I.Bragança, C. Silva, P. Martins	ICTP-246 - Thickness limitations in industrial flow forming process. B. Krishnamurthy, P. Blackwell, O. Bylya
ICTP-292 - Simulation-based investigation of the heat exchange within the partial hot stamping process. A. Reihani Masouleh, D. Badroosian, S. Heibel, T. Schweiker, M. Merklein	ICTP-520 - Mechanical properties of solid-state recycled aluminum chips by extrusion. L. Liliensten, M. Laurent-Brocq, A. Duchaussoy, T. Duchateau, C. Pinot, A. Schulze	ICTP-650 - A coupled approach based on statistical methods and machine learning techniques to improve porthole die design. G. Zangara, F. Gagliardi, G. Ambrogio, L. Filice		
Lunch • Sponsored by AIRBUS				

02:00 pm	PLENARY LECTURE: Toshihiko Kuwabara, «Advanced material testing methods for sheet metals», chair: Jun Yanagimoto					
	Auditorium		Azur 1	Azur 2	Siagne 1	
02:55 pm	SYMPOSIUM – BARLAT • Chair: Holger Aretz	JOINING • Chair: Gerhard Hirt	ICTP-164 - Friction-induced recycled aluminium semi-finished products in thermo-mechanical joining technology. T. Borgert, W. Homberg	ICTP-366 - Modeling of the compaction shot-peening process of an Al multiparticulate coating. L. Eschard, R. Kubler, L. Barrallier, C. Dides, F. Deloye, L. Gani	ICTP-457 - Multi-property design realized by multifilament cold extrusion. H. Utsunomiya, D. Taniguchi, J. Miyamoto, R. Matsumoto	
03:15 pm			ICTP-295 - A hybrid manufacturing technique for large-diameter thin-walled axisymmetric Al-Li components. Z. Zheng, H. Zhang, M. Zhan	ICTP-432 - Deep rolling for tailoring residual stresses of AA2024 sheet metals. J. Lehmann, S. Keller, F.Esterl, N. Kashaev, B. Klusemann, N. Ben Khalifa	EXTRUSION • Chair: Jjanguo Lin	
03:35 pm			ICTP-777 - Interpretation of the unloading non-linearity in DP980 steel using polycrystal FEA and its impact on springback. J. Youngung, B. Jeong, J. Lee, S.-Y. Lee, F. Barlat, C. Tomé	ICTP-758 - Simulation of Friction Forge Riveting Process. I. Tan, A. Daidié, G. Cohen, A.-C. Araujo		ICTP-152 - A low force extrusion technique for producing wide-thin aluminium panels. J.Lin, Z. Shi
03:55 pm			ICTP-710 - Investigation of 3rd gen advanced high strength steel subjected to strain path changes: experiments and modeling. G. Vincze, M. Butuc, F.Barlat, A. Pereira	ICTP-393 - Modeling and parameterization of a 3D simulation for clinching with extensible die. M. Rossel, G. Meschut		ICTP-306 - A novel process for reducing aluminum extrusion process scrap using profiled dummy blocks and billets. G. Oberhausen, D.Cooper
04:15 pm	Coffee break					
04:45 pm	SYMPOSIUM – BARLAT • Chair: Gilles Rousselier	JOINING • Chair: Junying Min	ICTP-518 - Investigation of clinched joints under shear tensile loading at high strain rates. M. Böhnke, C. R. Bielak, M. Bobbert, G. Meschut	ICTP-283 - Forced Lubrication Technology in Hydroforming. H. Kubota, T. Mikami, Y. Amano, S. Ishii, T. Miyazawa, K. Yoshida	ICTP-437 - Novel extrusion process for the production of Aluminum-Polymer-Composites. P. Kotzyba, J. Gebhard, A. Schulze, F. Günther, M. Stommel, A.E. Tekkaya	
05:05 pm			ICTP-419 - An Injection Lap Riveting Tool System. J. Pragana, R. Sampaio, I. Bragança, C. Silva, P. Martins	ICTP-358 - Tool Surface Properties after Severe Shot Peening. M. Okan Görtan, B. Yüksel, A. Adsız	ICTP-367 - Assessment of recently developed low-force extrusion methods for manufacturing aluminium vehicular hydrogen tank liners. Q. Cheng, R. Zhang, Z. Shi, J. Lin	
05:25 pm			ICTP-324 - SD Effect of Aluminum Alloy Sheets. K. Akiyama, R. Tachibana, T. Kuwabara	ICTP-377 - Controlled rivet deformation through a tailored strength distribution. B. Uhe, C.-M. Kuball, M. Merklein, G.Meschut	ICTP-265 - Visualization of shear processing condition by die vibration monitoring. Y. Kitano, J. Takami, Y. Suzuki, K. Abe	ICTP-527 - Influence of process parameters and die design on the texture development of direct extruded Magnesium flat products. M. Nienaber, N. Safieh, J. Bohlen, N. Ben Khalifa
05:45 pm			ICTP-581 - Anisotropic-asymmetric hardening characterization of BCC/FCC/HCP metals: experiments, modeling and numerical simulation. Y. Lou, C. Zhang, J. Whan Yoon	ICTP-256 - Virtual mechanical design of the clinching process. A. Kumar, A.Kacem, S. Thuillier	ICTP-337 - Investigation ofa the effect of combined hardfacing and nitriding on the durability of hot forging tools. Z. Gronostajski, P. Widomski, M. Kaszuba, M. Wilkus, M. Rychlik, J. Krawczyk	ICTP-266 - Pass-sche dule design for non-circular wire drawing. A. Sasaki, M. Nakano, H. Takao, H. Utsunomiya
06:05 pm	End of the day					

PLENARY LECTURE: Toshihiko Kuwabara, «Advanced material testing methods for sheet metals», chair: Jun Yanagimoto					
Siagne 2		IBIS	Conseil	La Napoule 1	La Napoule 2
SHEET FORMING • Chair: Dorel Banabic	ICTP-526 - Demonstrator plant for hot stamping of metal sheets and machine learning assisted anomaly detection for control systems. F. Neubürger, J. Arens, T. Kopinski, M. Hermes	ICTP-607 - Effect of initial orientation on microstructure evolution of aluminum single crystals during hot deformation. Y.Chen, S.Pan, Wenhui Liu	ICTP-330 - Prediction and control of microstructure evolution of a novel P/M nickel-based superalloy during near-isothermal forging. H. Wen, J. Jin, X. Wang	ICTP-181 - A rate-dependent damage mechanics model on plasticity and ductile fracture prediction of automotive steel sheets. C.Zeng, M.-M. Bisch, X.Fang	ICTP-323 - Modelling and evaluation of TCB and TCBC. W. Peng, H. Ou
	ICTP-409 - Investigation of hot stamping tools manufactured by Directed Energy Deposition. A. Komodromos, G. Marin, J. Grodotzki, A. E. Tekkaya	ICTP-627 - Effect of Multi-directional Forging Process on Microstructure and Properties of 20vol.% SiCw/6061Al Composites. G. Yang, W. Xu	ICTP-744 - Automatic optimization of shearing process by autopilot FEA with optimization algorithm based on machine learning. Y. Yoshida, A.Kutsukake	ICTP-351 - Numerical prediction of the impact fracture of a projectile penetrating into an inclined concrete target. M. Kuk Choi, J. Suk Yang, D. Ho Ha, J. Jang, H. Jo, K. Lyug Kim	ICTP-476 - AI prediction of the hardness of disc springs based on FEM results. L. Isidore Besong Besong, J. Buhl, S. Härtel
	ICTP-763 - A study on the springback of as-stamped Ti6Al4V panels. C. Tang, F. Tian, N. Li	ICTP-289 - The Strengthening mechanism of aluminum matrix composites reinforced by intergranular and intragranular carbon nanotubes. Y. Gao, X. Yan, Y. Li	ICTP-456 - Global Control of the Part's Geometry During Free-Form Bending with Neural Networks. P. Lechner, L. Scandola, D. Maier	ICTP-184 - An extended ductile fracture prediction model considering strain rate effects. Z. Jia, L. Mu, Y. Liu, Y. Zang	ICTP-329 - An online intelligent method for roller path design in conventional spinning. X. Yan, P.Gao, Y. Wang, M. Zhan
	ICTP-504 - A model for shell finite elements sheet rolling calculations. A. Cometa, H. Josephus Maria Geijsselaers, J. Havinga, A.Henricus van den Boogaard	ICTP-541 - Influence of shell material on the microstructure and mechanical properties of twin-roll cast Al-Si-Mg alloy. O.Grydin, M. Neuser, M. Schaper	ICTP-771 - Deep Convolutional Neural Network to assist Die Design for Flow Balance of Aluminum Hollow Extrusion. Y.-B. Yu, Y.-R. Lai, Q.-C. Hsu, T.-T. Truong	ICTP-382 - Investigation of damage-controlling process-parameters on the impact toughness of DP800-Steel. N. Fehlemann, D.Czempas, M. Könemann, D. Lenz, S. Münstermann, G. Hirt	ICTP-564 - Numerical modeling and mechanics of shear spinning. O. Music, M. Can Uzun
MICROSTRUCTURE EVOLUTION • Chair: Tatsuhiro Aizawa					
AI / DATA SCIENCE • Chair: Peter Groche					
DAMAGE & FRACTURE • Chair: José Alves					
INCREMENTAL FORMING • Chair: Hui Long					
Coffee break					
SHEET FORMING • Chair: Pascale Balland	ICTP-724 - New forming process for aluminum alloy thin shell and its formability at ultra-low temperature. X. Fan, X. Chen, S. Yuan	ICTP-609 - Semi-solid die casting of some aluminum alloys for lightweight automotive components. G. Gu, L. Xiang, R. Li, W. Xu, Y. Lu	ICTP-406 - Square tube fabrication by expansion drawing of circular tube. S. Kajikawa, Y. Kato, S. Zhang, T. Kuboki, M. Akiyama	ICTP-293 - Thermal control and uncertainty evaluation for characterising aluminium formability under hot stamping conditions. J. Li, A. Mendieta, R. Zhang, G. Sutton, Z. Shao	ICTP-229 - Distortion Reduction in Incremental Beading via Numerical and Experimental Approaches. D. Suarez, L. Huang, H.-p. Wang, J. Solomon, N. Sigmund, J. Cao
	ICTP-500 - Cryogenic deep drawing. M. Tulke, A. Wolf, R. Lafarge, A. Brosius	ICTP-187 - Grain structure evolution ahead of the die during friction extrusion of aluminum alloys. U. Suhuddin, L. Rath, C. Chan, B. Klusemann	ICTP-317 - Effect of material on strain direction in tube expansion drawing process. S. Zhang, T. Kuboki, M. Akiyama, S. Kajikawa	ICTP-302 - Damage evolution in the forming and the quenching operation of the gear shafts. T. Rakshit, A. Dunlap, S. Kraemer, A. Aretz, A. Schwedt, E. Tekkaya	ICTP-592 - A novel macro-micro integrated incremental sheet forming process for fabricating functional surface microtextures. Z. Ganglin, L. Yanle, L. Feifei, G. Deshun, Y. Hao, L. Fangyi, L. Jianfeng
	ICTP-478 - A robust method to determine true stress - true strain curves at high temperatures. R. Zhang, S.Chen, J. Lin	ICTP-496 - Solid-state recycling of aluminum alloys: how to limit oxidation by controlling processing parameters. M. Laurent-Brocq, L. Lilensten, C. Pinot, T. Duchateau, T. Corre, B. Huneau, A. Schulze, E. Tekkaya		ICTP-342 - In-Plane Bending Test for the edge ductility characterization at warm temperatures. L. Galdos, J. Agirre, E. Aranburu	ICTP-750 - Robotic SPIF numerical chain development and validation. S. Chevret, I. Tiba, Y. Ayed, D. Maldonado, V. Duc Le, T. Balan, P. Dal Santo
		ICTP-775 - Effect of grain size on mechanical properties of non-heat treated steel for cold forging. Y-S Lee, EY Yoon, YY Woo			ICTP-552 - Vibrating Tool Path Design for New Three-dimensional Vibration-assisted Incremental Sheet Forming. Zhidong Chang, Hui Long
MICROSTRUCTURE EVOLUTION • Chair: Wojciech Misiolek					
TUBE FORMING • Chair: Paulo Martins					
DAMAGE & FRACTURE • Chair: Yanshan Lou					
INCREMENTAL FORMING • Chair: Omer Music					
End of the day					

08:30 am	PLENARY LECTURES: Bernd-Arno BEHRENS, «Digital Transformation in the World of Forging», Sandrine Thuillier, «From homogeneous to heterogeneous mechanical testing of metallic materials», chair: A. Erman Tekkaya			
10:00 am	Coffee break			
	Auditorium	Azur 1	Azur 2	Siagne 1
10:30 am	SYMPOSIUM - BARLAT • Chair: Gabriela Vincze	ICTP-495 - A framework for analytical cup height computation in multi-stage deep drawing. H. Aretz	EXPERIMENTAL CHARACTERISATION • Chair: Vincent Grolleau	ICTP-150 - Inverse identification of a 3D anisotropic yield function through an information-rich tensile test. S. Coppieters, Y. Zhang, N. Vancraeynest, S. Cooreman
10:50 am		ICTP-346 - Interface characterization by nanoindentation and EBSD of Cu/Cu and Al/Cu joints welded by Magnetic Pulse Welding (MPW). B. Zielinski, T.Sadat, R. Dubois, S. Kossman, C. Collin, L. Lilensten, D. Jouaffre, E. Markiewicz, L. Dubar		ICTP-450 - Effect of die design on charge weld in aluminium profile extrusion. E. Can Sariyarlioglu, J. Ma, T. Welo, G. Ringen
11:10 am		ICTP-514 - Adaptive error-estimator based modelling for magnetic pulse crimping processes. F. Bay, J. Alves, J. O. Garcia Carrero, U. Ripert, J. Barlier		ICTP-453 - Experimental and numerical investigation of the forming zone in dieless wire drawing process of thin biometallic wires. M. Braatz, J. Bohlen, N. Ben Khalifa
11:30 am		ICTP-781 - Characterization and Forming of Al Pouch Film. T. Jin Jang, C. Sagong, J. Whan Yoon		ICTP-459 - In-plane torsion tests, toward large strains under monotonic and cyclic loading of sheet metals. X. Colon, B. Galpin, V.Grolleau, C.C.Roth, D. Mohr
11:50 am		ICTP-461 - Effect of material variability on sheet forming predictions. O. Cazacu, B. Revil-Baudard		ICTP-427 - Effect of ECAP process on the activation of deformation mechanisms during subsequent uniaxial tension of Mg-ZWKE sheets. J. Victoria-Hernandez, V. Böhm, M. Gruber, C. Steinbauer, W. Volk, N. Ben Khalifa, D.Letzig
12:10 am		ICTP-778 - On independent parameters and polynomial nature of Barlat-type of yield functions. T. Mánik, B. Holmedal		ICTP-655 - The interface evolution and mechanical properties of solid state recycled Mg-Gd-Y-Zn-Zr alloy during rotary extrusion. T. Bugging, W. Ji, P. Yanbo, L. Bing
12:30 am	ICTP-780 - Crystal plasticity prediction of the elasto-plastic transition. H. Asadkandi, T. Mánik, B. Holmedal, O. Sture Hopperstad	ICTP-272 - Joint strength determination by a resistance-based sensor in metal-polymer joining by hydraulic expansion. F. Weber, M. Hahn, A. E. Tekkaya	ICTP-634 - Investigation on Metal Flow of Combined Forward-Backward Extrusion from Hollow Billet. Q. Wang, M.Meng, X. Li, Z.Zhang	
12:30 am	Lunch • Sponsored by AUBERT & DUVAL			

PLENARY LECTURES: Bernd-Arno BEHRENS, «Digital Transformation in the World of Forging», Sandrine Thuillier, «From homogeneous to heterogeneous mechanical testing of metallic materials», chair: A. Erman Tekkaya				
Coffee break				
	Siagne 2	IBIS	Conseil	La Napoule 1
SHEET FORMING • Chair: Luis Menezes	ICTP-180 - Flattening of pyramidal asperities under combined normal loading and in-plane biaxial straining. U. Arinbjarnar, M. Zwicker, M. Knoll, N. Bay, C. Nielsen	ICTP-391 - Full-field microstructure modeling of a Nickel base superalloy during industrial forging processes. C.T. Nguyen	ICTP-544 - The influence of cutting speed on component quality for ductile and high-strength materials. A. Graf, A. Leonhardt, P. Krutz, M. Rehm, M. Dix	ICTP-404 - Formability of ultra-thin sheet metals based on a stress rate direction-dependent constitutive model. T. Oya, K. Ito, G. Uemura, N. Mori
	ICTP-492 - Die-embedded friction sensing system. M. Yang, T. Kyuno	ICTP-416 - Characterization Strategies for the Parametrization of Post-Dynamic Recrystallization in a Full Field Model. H. Brüggemann, N. Mostafa Talaat Elekyabi, G. Hirt, P. de Micheli	ICTP-396 - Fine piercing of amorphous electrical steel sheet stack using newly developed nano-textured punch. T. Shiratori, I. Komori, Y. Suzuki, K. Abe, T. Aizawa	ICTP-426 - Controlling the damage evolution in roll forming. P. Lennemann, J. Grodotzki, A. E. Tekkaya
	ICTP-547 - Prediction of tool life in roll forming using analytical and data-based modeling. M. Becker, P.Schuster, P. Groche	ICTP-580 - Microstructure Characterization of Ni-based Superalloys during Thermal Exposure. Z. Wang, H.Yu, B.Zhang, Y. Ning	ICTP-435 - The influence of the stamping parameters on the warpage of leadframe. H.-S. Lin, J.-J. Zhuang, D.-S. Zhang	ICTP-224 - Investigation of the damage behavior of Steel/CF hybrid by pure bending test. X. Hu, B. Zhu, C. Creighton, P. Zhang, R. Taube, M. Weiss
	ICTP-253 - Evaluation of required diameter adjustment of a novel ironing punch concept for reducing wear during retraction. K. Siimut, U. Arinbjarnar, K. Madsen, E. Ceron, T. Madsen, C. Nielsen	ICTP-747 - Effect of solution parameter on the microstructure evolution and mechanical properties of GH4175 superalloy. Z. Zhang, J. Luo, H.Guo, H. Pang, M. Li	ICTP-515 - Numerical simulation and experimental verification of the blanking process of aluminum alloy cylinder support. Z.-C.Huang, G.-C. Guo, Y.-Q. Jiang	ICTP-755 - On the assessment of the forming limit diagram at necking and fracture for polymer sheets. A. Rosa-Sainz, G. Centeno, M. B.Silva, V. Lallellano
	ICTP-254 - Investigation of prestrain influence on bending-under-tension springback. Y. Yang, C. Baudouin, H. Chalal, G. Vincze, T. Balan	ICTP-792 - Prediction of microstructure for Inconel718 laser welding process using multi-scale model. Y. Chen, H. Xu, Y. Lu, Y. Wang, K.Huang, Q. Zhang, S.Wang	ICTP-475 - Modeling and numerical simulation of the temperature evolution in milling machining. A. Najem, G. Altmeyer, A. Duchosal	ICTP-776 - Effect of microstructure on edge ductility of dual-phase steels. V. Rezazadeh, R. H.J. Peerlings, J. P.M. Hoefnagels, M. G.D. Geers
Lunch • Sponsored by AUBERT & DUVAL				

02:00 pm	Workshop: Towards a paradigm shift related to the ever-increasing use of data science in materials & manufacturing?			
	Auditorium	Azur 1	Azur 2	Siagne 1
03:00 pm	SYMPOSIUM - BARLAT • Chair: Jeong Whan Yoon ICTP-473 - Predicting plastic anisotropy of aluminum alloys using CPFE models incorporating heterogeneous microstructural features. <i>T. Park, H. Lim, B. Reedlunn, S. Kramer, E. Corona, F. Pourboghrat</i>	ICTP-446 - Laser surface modification on titanium bipolar plate of hydrogen fuel cell to enhance bonding performance. <i>J. Min, F. Lv, H. Wan, J. Lin</i>	ICTP-731 - High-temperature tensile testing of metal tubes with small diameters by resistance heating method. <i>Q. Zheng, T. Furushima</i>	ICTP-509 - Metamodel-based open die forging optimization. <i>S. Fays, C. Baudouin, L. Langlois, M. Borsenberger, T. Balan, R. Bigot</i>
03:20 pm		ICTP-303 - Effect of temperatures on mechanical properties and microstructure evolution of laser-welded Ni-base superalloy. <i>T. Hou, Y. Wang, D. Wang, Y. Li</i>	ICTP-163 - Study on deformation behavior of X70 pipeline steel under hot straightening condition. <i>Z. Xue, B. Guan, Y. Zang</i>	ICTP-455 - Automated pre-form design for optimisation of multi-stage hot forging technology. <i>N. Biba, S. Stebunov, A. Vlasov, K. Kenzhaliyev, A. Duzhev</i>
03:40 pm		ICTP-653 - Trade-off analysis of alternative numerical modelling approaches for distortion and stress field prediction in SAW. <i>F. Battista, D. Izquierdo Rodriguez, F. Gagliardi, G. Ambrogio, L. Filice</i>	ICTP-207 - Ultrasonic Vibration Influences on the Flow Stress Behavior of a Ferrite-Perlite and Austenite Stainless Steel. <i>M. Burmeister, E. Kerscher</i>	ICTP-286 - Towards the real-time piloting of a forging process: development of a surrogate model for a multiple blow operation. <i>D. Uribe, R. Bigot, C. Durand, C. Baudouin, P. Krumpige</i>
04:00 pm		ICTP-350 - Characterization of the dynamic recrystallization kinetics of 42CrMo steel. <i>M. Kaswande Razali, S. Hwan Chung, M. Irani, J. Muk Choi, M. Soo Joun</i>	ICTP-545 - Numerical investigation of the coupled friction behavior in the clinching process chain. <i>C. R. Bielak, M. Böhnke, M. Bobbert, G. Meschut</i>	ICTP-626 - A case-based reasoning system combining expert knowledge for automated design of multi-pass hot forging for hub bearings. <i>J. Xu, W. Xu</i>
04:30 pm	Departure for Nice (banquet)			

Workshop: Towards a paradigm shift related to the ever-increasing use of data science in materials & manufacturing?									
Siagne 2		IBIS		Conseil		La Napoule 1		La Napoule 2	
SHEET FORMING • Chair: Chris Nielsen	ICTP-485 - Development of warm and cold tube forming of Ti-6Al-4V alloy by press forming. Y. Okude, T. Iwaoka, I. Nakamura, T. Muraoka, T. Katagiri	MICROSTRUCTURE EVOLUTION • Chair: Mathilde Laurent-Brocq		ROLLING • Chair: Gerhard Hirt	ICTP-442 - Fast Numerical Model for Predicting Residual Stresses in Hot Rolled Profiles. A. Milenin, S. Witek, L. Rauch, I. Milenin, R. Kuziak, M. Pietrzyk	DAMAGE & FRACTURE • Chair: Housseem Badreddine	ICTP-240 - A methodology using cycle jump algorithm for prediction of the low cycle fatigue life concerning mechanical structures. X. Liu, C. Labergere, H.Badreddine	CONSTITUTIVE MODELING • Chair: Holger Aretz	ICTP-516 - Stress-free and simultaneous determination of yield locus and flow curve parameters by incomplete full-field measurement. C. Karadogan, M. Liewald
	ICTP-170 - A New Type of CubeSat Structure Utilizing the Superplastic Forming Process. Y. Alqassab, F. Jarar		ICTP-251 - Deformation, damage and fracture behaviours of TWIP steels based on CZM-CPFEM at high temperature. W. Cai, C. Sun, H. Zhang, M.W. Fu		ICTP-242 - Evaluation of crack propagation during cyclic bending of wire strip. A. Biallas, M.Merklein				
	ICTP-639 - Superplastic rectangular bugling of AA8090 numerical modeling: validation and development. A. Lahbari, K. Bouchaala, M. Faqir, E. Essadiqi		ICTP-384 - Modelling texture evolution during warm rolling of strip-cast non grain oriented electrical steel with 3.5wt% Si. A. Shiv Kanth Vuppala, T. Bahs, M. Müller, J. Gerlach, G. Hirt		ICTP-499 - A study of void closure in hot rolling bars of stainless steel. A. Favre, R. Valente, M. Baisotti, D. Olivero, L.Viotto		ICTP-300 - Study on Mechanical Resposnes from forming to service of Metallic Sealing Rings. P. Zhao, Z. Zheng, M. Zhan, M.W. Fu		ICTP-313 - A Method for Determining Flow Curve of Steel Considering Work Hardening Behavior. A. Suzuki, K. Okamura, O. Kada
			ICTP-612 - Influence of stress state and misorientation on grain deformation coordination of Ferrite-Ferrite bi-crystal. Y. Xu, L. Xu, W. Zhang		ICTP-282 - Lateral spread in industrial hot rolling processes. B. Tian, S. Kleber, M. Magritzer, J. Bernauer				ICTP-191 - Direct measurement of onset of yielding: macro method and experimental proof of concept. J. Rebelo Kornmeier, S. Vitzthum, M. Hofmann, M. Gruber, E. Maawad, A. Castanhola Batista, W. Volk
Departure for Nice (banquet)									

09:30 am	PLENARY LECTURE: Julian Allwood «The role of metal forming in a world with zero emissions», chair: Paulo Martins			
	Auditorium	Azur 1	Azur 2	Siagne 1
10:25 am	SYMPOSIUM - BARLAT • Chair: Bjørn Holmedal ICTP-794 - Stress-strain curve with surround DIC. B. Jordan, V. Grolleau, D. Mohr	EXTRUSION • Chair: Noomane Ben khalifa ICTP-205 - Improvement of mechanical property variation in RS Al-Fe alloy hot extruded material by composition gradient of billet. R. Kobayashi, T. Maeda, T. Funazuka, T. Shiratori	TUBE FORMING • Chair: Werner Homberg ICTP-259 - Forming quality indices for tube roll forming: definition and modelling. E. Simonetto, Q. Wang, A. Ghiotti, S. Bruschi	FORGING • Chair: Gracious Ngalle ICTP-194 - Reduction in Barreling of Hollow Cylinder by Combination of Compression and Torsion in Upsetting with Conical Dies. R. Matsumoto, S. Tanaka, H.Utsunomiya
10:45 am				
11:05 am				
	ICTP-568 - Anisotropy evolution in plastic flow under non-proportional loading paths. J. Ha, M. Kim, J. McNally, Y. Korkolis	ICTP-550 - A novel cooling method for minimizing the quench distortion and maximizing the toughness of hollow extrusions. A. Alafaghani, L. Adams, D. Cooper	ICTP-603 - Modular tool setup for Internal Flow-Turning. E. Wiens, W. Homberg	ICTP-501 - Reduction of forging load by applying lateral oscillation. K. Hirota, N. Hashida
11:25 am	Coffee break			
11:40 am	Posters session			
12:30 am	Lunch • Sponsored by SAFRAN & SAFRAN TECH			

PLENARY LECTURE: Julian Allwood «The role of metal forming in a world with zero emissions», chair: Paulo Martins					
Siagne 2		IBIS	Conseil	La Napoule 1	La Napoule 2
SHEET FORMING • Chair: Mihaela Banu	ICTP-146 - Post Forming Electro Plastic Effect spring-back reduction on AA5754. P. Jimbert, N. Otegi, I. Aizpuru, M. Barrenetxea, J.Mendiguren	ICTP-452 - Full field grain size prediction: precipitates evolution and continuous dynamic recrystallization with DIGIMU® solution. P. De Micheli, K. Alvarado, V. Grand, M.Bernacki	ICTP-345 - New models for cold rolling: generalized slab theory and slip lines for fast predictions without finite elements. M. Erfanian, E. Brambley, F. Flanagan, D. O'Kiely	ICTP-208 - Increasing The Occuring Normal Stresses In Conical Tube-Upsetting Test Using Adapted Specimen Geometries. M. Henze, G. Hirt	ICTP-407 - Rate-dependent hardening behavior and TRIP effect in Quenching and Partitioning steels. M.-M. Bisch, C. Zeng, R. Juan, J. Lian, X. Fang
	ICTP-491 - Precision manufacturing of large sheet metal parts by electro-magnetic/electrohydraulic hybrid forming process. Z. Lai, C. Li, Z. Zhang, W. Xu, X. Li, Q. Cao, X. Han, L. Li	ICTP-448 - Modeling zirconium alloys recrystallization. V. Grand, A. Gaillac, M. Bernacki	ICTP-333 - New discoveries in rolling: understanding stress distribution and parameter dependence for faster, more accurate models. F. Flanagan, D. O'Kiely, A. O'Connor, M. Erfanian, E. Brambley	ICTP-385 - Comparison of several methods for measuring elasticity coefficients. X. Lemoine, F.Bonnet	ICTP-402 - Constitutive equation for thixoforming of SKD11 steel with various geometrical morphology and solid fraction. Y. Meng, J.-M. Fang, S. Sugiyama
			ICTP-666 - Simulation of the third octave chatter phenomenon using a numerical model for a tandem cold rolling mill. B. Claudet, J. Francken, G. Monteiro Garcia	ICTP-352 - Improvemacnt of A Testing Method of Cold Forging Performance of Steel Wires. T. Hakoyama, K. Kato, K. Aoyama, N. Ibaraki, Z. Wang	ICTP-322 - Consistent modeling of thermo-viscoplasticity for high-speed processes. P.Longère
MICROSTRUCTURE EVOLUTION • Chair: Stephen Niezgoda		ROLLING • Chair: Alexandre Barthelemy		CONSTITUTIVE MODELING • Chair: Dirk Steglich	
Coffee break					
Posters session					
Lunch • Sponsored by SAFRAN & SAFRAN TECH					

02:00 pm	Workshop: Challenges and opportunities of material forming industries towards zero emission objectives			
	Auditorium	Azur 1	Azur 2	Siagne 1
02:55 pm	SYMPOSIUM - BARLAT • Chair: Dirk Mohr SYMPOSIUM - BARLAT • Chair: Jinjin Ha SYMPOSIUM - BARLAT • Chair: Beatriz Silva SYMPOSIUM - BARLAT • Chair: Alexandre DA SILVA Rocha	ICTP-803 - A Hot Stamping Process for Third Generation Advanced High Strength Steels using a Quench and Partition Process Route. A.R.H. Midawi, C. Tolton, M. Subramanian, T. Skszek, C. Butcher, M.Worswick	ICTP-785 - A new multiscale numerical framework to incorporate texture evolution into phenomenological plasticity models. K. Inal, C. Kohar, J. Bassani, R. Mishra	ICTP-258 - Process Development for Passive Granular Media-Based Tube Press Hardening. F. Kneuper, J. Groditzki, A. E. Tekkaya
03:15 pm		ICTP-711 - The role of the yield criterion on stress and strain paths under non-proportional loadings. M. Nouri, M. C. Oliveira, A. Khalfallah, D. M. Neto, J. L. Alves, L.F. Menezes	ICTP-365 - Forming limit prediction of multi-layered metal-polymer sheet using enhanced Marciniak-Kuczynski model. Y. Hou, C. Moon, J.-H. Park, A. Gupta, J. Lian, M.-G. Lee	ICTP-566 - Modelling of Tube Hydroforming - Identification of best process parameters by comparing results of different FE models. P. Ginestra, A. Fiorentino, E. Ceretti, Aldo Attanasio
03:35 pm		ICTP-408 - Temperature-dependent plasticity and fracture properties of modern bcc steels. F. Shen, H. Xu, S. Münstermann, J. Lian	ICTP-394 - Determination of Optimized Biaxial Cruciform Specimens of Mild Steels and Aluminum Alloys. D. Banerjee, M.Iadicola, E. Rust	ICTP-147 - Optimization Support Method for Cold and Warm Forging Dies of Non-Axisymmetrical Forged Products. R. Okamoto, M. Umeda, Y. Mure, K. Katamine, K. Imanaga
03:55 pm				ICTP-321 - Knowledge-based Dies Design Method for Cold or Warm Forging Dies Shared in Sequential Forging Press. M. Umeda, Y. Shibai, Y. Mure, K. Katamine
04:15 pm	Coffee break			
04:45 pm	SYMPOSIUM - BARLAT • Chair: Michael Worswick SYMPOSIUM - BARLAT • Chair: Kaan Inal SYMPOSIUM - BARLAT • Chair: Takashi Kuboki SYMPOSIUM - BARLAT • Chair: Takashi Ishikawa	ICTP-779 - From kinematic to distortional hardening. B. Holmedal, T.Mánik, B. Reyne, O. Sture Hopperstad	ICTP-791 - Effect of pre-strain on springback behavior after bending in AA 6016-T4: Experiments and crystal plasticity modeling. D.Sargeant, Md Zahidul Sarkar, R. Sharma, M. Knezevic, D. Fullwood, M. Miles	ICTP-273 - Limits of the pressing process for vault structured recuperator tubes. A. Neumann, S.Härtel
05:05 pm		ICTP-487 - The simplified distortional hardening model and its application to sheet metal forming. H. Choi, J.Whan Yoon	ICTP-245 - Elasto-plastic deformation characteristics of aluminum alloy sheet subjected to non-linear stress paths.. S. Asari, T. Kuwabara, H. Hayamizu	ICTP-708 - Integration of fem processing maps to determine the formability of a continuous cooling bainitic steel. A. da Silva Rocha, T. Ivaniski, A. C. Silveira, J. Epp
05:25 pm		ICTP-454 - Anisotropic hardening models for multiple strain path changes in high strength steels forming. B. Reyne, T. Manik, H. Moradi, B. Holmedal	ICTP-277 - Characterization of the flow behavior of a Ti-6Al-4V alloy during cylinder compression. S. Min Ji, M. Kaswande Razali, J. Muk Choi, M. Soo Joun	ICTP-722 - Realizing Metamorphic Manufacturing. G. Daehn, S. Niezgoda, B. Thurston, M. Groeber
05:45 pm		ICTP-519 - Non-iterative stress projection method for continuum plasticity. S. Yoon, S. Lee, F. Barlat	ICTP-682 - Distortional hardening of wrought Mg alloy. B. Shi	ICTP-753 - Investigation on Energy Efficient Manufacturing of Gears by Controlled Forging of Bainitic Steels. A. da Silva Rocha, V. Marques De Menezes, R. L. Dalcin, C. J. Turra, T. Marques Ivaniski
06:05 pm				ICTP-278 - Flow behavior of an A6082 alloy at elevated temperature. J. Hwi Park, M. Kaswande Razali, J. Muk Choi, S. Min Ji, N. Abd Hamid, M. Soo Joun
06:25 pm	End of the day			

Workshop: Challenges and opportunities of material forming industries towards zero emission objectives					
Siagne 2		IBIS	Conseil	La Napoule 1	La Napoule 2
SHEET FORMING • Chair: Erman Tekkaya	ICTP-223 - Investigation of measures for material flow control during backward extrusion of geared components from coil. M. Leicht, J. Henneberg, M. Merklein	ICTP-576 - Accelerated phase-field simulations for static and dynamic recrystallization. Q. Zhang, G. Fang	ICTP-403 - Effect of Cr concentration and oxide scale composition in hot rolling tools. J. Akaike, T. Katsumura, M. Miyake	ICTP-524 - Assessing the Bendability of UHSS in Plane Strain Conditions. P. Krawec, S. Hazra, E. Brambley	ICTP-176 - Model-based evaluation of methods for the determination of the onset of yielding by temperature measurement. C. Hartmann, S. Vitzthum, L. Maier, W. Volk
	ICTP-238 - Demonstrating the applicability of folding-shearing in a press-line. R. Arora, C. Cleaver, J.Allwood	ICTP-399 - Unsupervised Segmentation for Microstructure Identification of High Strength Steel. B. Zhu, K. Shu, W. Liu, Z. Chen, Y. Wang, Y. Zhang	ICTP-790 - Hot rolling modelling : optimization of trimmed area based on crocodiling and edge cracking simulations. L. Nguyen, A. Harrup, A. Barthelemy	ICTP-412 - Stress relief for crack prevention by adding cavities to V-bending die. R. Yakuno, H. Suwa, K. Takahashi, S. Kajikawa, Y.Yusa, T. Kuboki	ICTP-359 - Hot deformation behavior and element diffusion of bimetallic ring blank by centrifugal casting under hot compression. Y. Jia, H. Qi, Z. Li
	ICTP-247 - Plate Roll Embossing Process - The efficient and flexible embossing of sheet metals. D. Briesenick, M. Liewald, P. Heinzelmann	ICTP-557 - Chemically architected alloys: combining mechanisms to improve the mechanical properties. M. Laurent-Brocq, L. Denax, D. Mereib, J. Monnier, R. Pirès, L. Perrière, B. Villeroy, A.-F. Gourgues-Lorenzon, Y.Madi	ICTP-415 - Profile Contour and Flatness Control of Electrical Steel in Multiple-width Schedule Free Rolling. J. Cao, C. Song, L. Wang, Q. Zhao, J. Xiao, L. Sun	ICTP-734 - Warm V-Bending and Hydrogen Embrittlement Properties of Ultra-high-Strength TRIP-Aided Bainitic Ferrite Steel Sheets. A. Nagasaka, T. Hojo, J. Kobayashi, C. Tabata	ICTP-560 - Recovering and Hot Deformation Processing of Recycled Spray Formed 7055 Aluminum Alloy Powders. L. Wang, Z. Tao, Huang, M. Shi, X. Ma
	ICTP-203 - Concept for the incorporation of auxetics as active die faces for flexible metal forming. P. Frohn-Sörensen, B. Engel, J. Reuter		ICTP-257 - Temperature control during the process combination welding and rolling for adjusting the microstructural evolution. B. Sydow, S. Härtel	ICTP-521 - Scalable tool design for 3D swivel bending. M. Schiller, B. Engel, P. Frohn-Sörensen	ICTP-699 - An imacproved physically-based constitutive model for the hot deformation behavior of GH4698 superalloy. P. Yan, D. Wen, J. Li
MICROSTRUCTURE EVOLUTION • Chair: Carlos N. Tomé					
ROLLING • Chair: Mirentxu Dubar					
BENDING • Chair: Junying Min					
CONSTITUTIVE MODELING • Chair: Bjørn Holmedal					
Coffee break					
SHEET FORMING • Chair: Hengan Ou	ICTP-335 - Influencing parameters in the deep drawing of fiber metal laminates with low viscous matrix. M. Kruse, N. Ben Khalifa	ICTP-199 - Crystallographic and experimental studies of non-basal slip in magnesium. Y. Huang, J. iang	ICTP-182 - An integral generating forming process for tubular parts with longitudinal and transverse external ribs. X. Chen, Z. Yu, Y. Zhao, Z. Zhu	ICTP-158 - Effect of initial cross-sectional shape on bent shape in "Bending and compression method" for in-plane bent sheet metal. T. Muraoka, Y. Okude, S. Kajikawa, T. Kuboki	ICTP-294 - MD simulation on the initiation of plastic deformation by nanoindentation. Y. Sato, S. Shinzato, T. Ohmura, T. Hatano, J. Yanagimoto, S. Ogata
	ICTP-380 - Design Optimization and Validation of GMT hat structures under crushing load cases. S. Jayakumar, S. Christy Anand, X. Fang	ICTP-284 - Influence of Equal Channel Angular Pressing on the Microstructure and Texture of Mg-Zn-Y-Zr-RE Alloy Sheets. V. Böhm, M. Gruber, E. Abele, C. Steinbauer, J. Victoria-Hernández, D. Letzig, N. Ben Khalifa, W. Volk	ICTP-458 - The forming technology of thin-walled conical ring with inner transverse rib: numerical and experimental investigations. X. Tian, F. Chen, Z. Cui	ICTP-451 - Improving the bending performance of high strength thin-walled structures by laser-assisted robotic roller forming. Y. Liu, J. Wang, W. Cai, J. Lian, B. Carlson, J. Min	ICTP-216 - Study on the micro-scale deformation behaviour of Al-B4C composite by using CPFE-CZ model. X. Tong, Y. Li, M. W. Fu
	ICTP-439 - Development of the one-step hybrid forming process to produce an Al-GMT-Hybrid Crash Management System. A. Hajdarevic, S. Jayakumar, L. Stolz, X. Fang	ICTP-334 - Improving the precipitation hardness of ductile Magnesium alloys by alloying and processing. G. Kurz, S. Jo, J. Bohlen	ICTP-494 - Examination of a composite ring rolling process with different wall thicknesses in FEM and experiment. L. Kluge, S. Stergiano, D. Bailly, G. Hirt	ICTP-363 - Investigation of warping and springback in kinematic U-profile bending with partial heating. E. Hoffmann, J. Grodatzki, A. E. Tekkaya	ICTP-464 - 3-D FE forming simulations accounting for texture induced anisotropy. B. Revil-Baudard, O. Cazacu
	ICTP-635 - Negative Pressure Forming of Double-curved Sandwich Panels Based on Reconfigurable Discrete Mold. M. Wang, Y. Qi, D. Li	ICTP-443 - Correlation among stress state, plastic mechanism, and texture evolution: Analysis with effective Schmid factor. S. Chen, S.Deng, H.Song,S.Zhang	ICTP-222 - Development of dimensional control technology for seamless steel pipe rolling in sizing mill. Y. Yoshimura, S. Sasaki, T. Katsumura, M. Miyake	ICTP-482 - Effect of Diameter of Fulcrum Roller on Shape of Rebar in Bending. S. Higaki, T. Go, K. Mizuno, M. Sasaki, T. Tanaka	ICTP-375 - Simulation of texture development of TA15 alloy tube during spinning based on crystal plasticity finite element method. X. Wang, W. Wu, T. Liu, R. Zhang
MICROSTRUCTURE EVOLUTION • Chair: Shi Hong Zhang					
ROLLING • Chair: Gang Fang					
BENDING • Chair: Heng Li					
CONSTITUTIVE MODELING • Chair: Xiaoqiang Li					
ICTP-537 - Formability in warm deep drawing of CFRTP using tensile test with crossing angle of carbon fiber as a variable. M. Hoshino, N. Takahashi, Y. Nagai					
ICTP-610 - Effect of Ca or/ and Sr on microstructure evolution and mechanical properties of extruded Mg-2Zn alloy. L. Chang					
ICTP-742 - The ERW tube cold roll forming simulation with different cage roll arrangement and fin pass design. J.-J. Sheu, E.-X. Jian					
ICTP-438 - Mechanical reaction of granular filler and its interaction mechanism with tube during push-bending process. W. Xie, S. Chen, H. Song, S. Zhang					
End of the day					

08:30 am	PLENARY LECTURES: Pierre Montmitonnet «Space-and time-varying friction in metal forming risks and opportunities, experimental and numerical assessment», Ming Wang Fu «The past, present & future challenges in microforming», chair: Elisabeth Massoni			
10:00 am	Coffee break			
	Auditorium	Azur 1	Azur 2	Siagne 1
10:30 am	ICTP-533 - Formability and spring-back of light metals at high strain rates. SH. Zhang, H. Li, Y Xu, S-F. Chen, H-W. Song	ICTP-620 - A more general orthotropic strain-rate potential based on the linear transformation method. J. P. Brito, M. C. Oliveira, J. L. Alves	ICTP-486 - The effect of electroplasticity on CNTs/Al under different heat treatment tempers. H. Dong, G. Guo, Y. Li, X. Li, H. Fan, D. Li	ICTP-219 - AMC hot forging. M. Graf, R. Pippig, T. Lehnert, A. Jedynak, S. Härtel
10:50 am			ICTP-636 - A study of internal defects in flexible hot medium hydroforming of complex structures of fiber metal laminates. Y. Dongdong, L. Yong, Z. Chiye, Z. Sanmin, L. Lihui	ICTP-250 - Shear Forging of Aluminum and Copper Material. Z. Wang, T. Hakoyama
11:10 am	ICTP-709 - On the numerical assessment of failure in stretch-flanging by SPIF using equivalent strain versus triaxiality diagrams. J. A. López-Fernández, G. Centeno, C. Vallellano	ICTP-197 - Plane strain layered-compression. G. J. Bérès, R. Borbély, M. L. Köllös, D. Gy Szöke	ICTP-662 - Enhanced mechanical properties of high temperature titanium alloy component by fast gas forming with in-die quenching. W. Chen, K. Dang, K. Wang, G. Liu	ICTP-410 - Numerical and Experimental Investigation of Deformation Characteristics during High-Frequency Radial Forging of AA7075. S. Tamimi, J. Huang
11:30 am	ICTP-441 - Improving formability of titanium bipolar plate via hot stamping. X. Zhang, N. Guo, W. Wang, D. Yang, J. Min, P. Ming, C. Zhang	ICTP-190 - Inverse identification of the YLD2000-2D yield locus exponent for stainless steel 1.4301. K. Barth, M. Afra-siabi, M. Bambach	ICTP-676 - Fabrication of SiC fiber-reinforced titanium matrix composite via powder hot isostatic pressing. Y. Xiao, Y. Li, H. Du, L. Lang	ICTP-539 - Effect of strain rate on the mechanical and microstructural properties of Ti-6Al-4V - Application to hammer forging. J. Agirre, B. Erice, P. Arrese, N. Otegi, L. Galdos
11:50 am	ICTP-339 - Application of Barlat's Yld 2000 Yield Stress Function to Predict Anisotropic Plastic Behaviour and Limit Strain Curve. J. Divo Bressan, M. Donadon	ICTP-508 - In-plane torsion test - Analysis of the tool design. F. Stiebert, H. Traphöner, A. E. Tekkaya	ICTP-678 - An experimental study of the densification mechanism in semi-solid powder forging of Diamond/6063 Al Composite. W. Zhang, Y. Li, H. Du, L. Lang	ICTP-248 - Forming of involute gear by back pressure controlled divided flow forging by using liquid lubricant. A. Yanagida, M. Kawata, T. Soga, Z. Wang
12:10 am		ICTP-538 - A material model optimization approach for the sheet metal forming process using the hole expansion test. T. Bhujangrao, T. Chezan		
12:30 am	Lunch • Sponsored by TRANSVALOR			

PLENARY LECTURES: Pierre Montmitonnet «Space-and time-varying friction in metal forming risks and opportunities, experimental and numerical assessment», Ming Wang Fu «The past, present & future challenges in microforming», chair: Elisabeth Massoni				
Coffee break				
Siagne 2	IBIS	Conseil	La Napoule 1	La Napoule 2
ICTP-225 - Thinning and springback of 5A06 aluminum alloy thin-walled elbow was studied by experiments and simulation. X. Huang, B. Guan, Y. Zang	ICTP-659 - Prediction of Grain Size Uniformity in Hot Forming of TA15 Unequal Thickness Thin-walled Shell. Z. Sun, Z. Dang	ICTP-549 - Numerical modeling of the redistribution of residual stresses in deep rolled cross bores due to cyclic torsional loading. L. Uhlmann, F. Reissner, S. Nambla Rathnakar, J. Baumgartner, T. Herrig, T. Bergs	ICTP-151 - Linear Energy Density and ductility of Ti6Al4V parts produced with additive Powder Bed Fusion technology. G. Buffa, D. Palmeri, G. Pollara, L. Frattini	ICTP-540 - Parameter identification applying Full-Field Calibration (FFC) techniques. C. Ilg, A. Haufe, M. Liewald
ICTP-440 - Dimension evolution and control of ultrathin metallic sealing ring considering whole forming process. B. Yan, B. Meng, D. Li, M. Wan	ICTP-296 - Anisotropic size effect on the plastic deformation behavior of β -Ti. H. Zhang, L. Deng, X. Wang, X. Tang, J. Jin	ICTP-186 - Study on the behavior of rotating material around the pass line at exit with caliber-rolling for wire and rod. R. Ifuku, H. Kushida	ICTP-171 - Hybrid Additive Manufacturing of Silver Collector Coins. J. Pragana, P. Alexandrino, R. Sampaio, A. Araújo, I. Bragança, C. Silva, P. Martins	ICTP-614 - Two-step homogenization of the elasto-plastic behaviors of Csf/Mg composites. W. Tian, X. Chao, J. Zhou
ICTP-471 - Simplified calibration of the compartmentalized model. W. Liegard, L. Charleux, E. Roux, P. Balland, L. Tabourot	ICTP-332 - Refinement mechanism of coarse grains in as-cast Ti2AlNb-based alloy through uniaxial and multi-axial compressions. H. Liu, Z. Yang, Z. Cui	ICTP-723 - Flexible skew rolling process. X. Wu, L. Lin, W. Peng, Y. Shao, H. Li	ICTP-463 - Design and manufacturing of a WAAM lightweight press-hardening forming tool and testing of press-hardened metal sheets. R. Jäger, B. Sydow, A. Schmidt, S. Härtel	ICTP-588 - Mechanical property enhancement due to small strain deformation prior to peak-age hardening in an Al-Mg-Si alloy. A. Essien, Z. Li, C. Barbatti, C. Mendis, Y. Huang
ICTP-522 - The bending method for sheet metal having widely thickness change by press brake with variable punches. H. Okada, N. Hirano, T. Kimura, H. Oribe, T. Wada, S. Azami, T. Kitahata	ICTP-444 - A study on deformation mechanisms of Ti2AlNb-based alloy under plane strain compression. Z. Yang, H. Liu, H. Zhang, Z. Cui	ICTP-227 - Deformation characteristics and Microstructure evolution of GH4169 alloy Bars with delta-phase by Flexible Skew Rolling. H. Zhang, B. Wang, C. B. Zhu, Y. Li, J. Yin	ICTP-316 - Study on mechanical properties of hybrid aluminum alloy formed by forging and wire arc additive manufacturing. Z. Yu, X. Yu, X. Chen, J. Ni	ICTP-683 - A phenomenological constitutive model for the tension-compression asymmetry in Magnesium alloys. K. Zhang, H. Badreddine, Z. Yue, H. Yan, S. Han
ICTP-531 - On Forming Sheet Metal Parts in Single Curvature with English Wheel. K.-J. Fann, Y.-H. Wu	ICTP-670 - Hot deformation behavior of as-cast Ti-6554 alloy with different grain morphologies. S. Guo, C. Li, L. Huang, J. Li	ICTP-718 - Towards a generalized template for smart manufacturing use cases. X. Feng, L. Ding	ICTP-220 - Temperature effect in nickel superalloy forming based on solid-state bonding. Y. Wang, Y. Liu, J. Jiang	ICTP-297 - A new model for creep-ageing of aluminium alloy under various thermal conditions. Y. Li, T. Hou, Y. Gao
ICTP-641 - The reverse bulging deep drawing of thin walled curved shells. Wen Sun, Wei Liu, Yongchao Xu, Shijian Yuan			ICTP-698 - Wire arc additive manufacturing of aluminium alloy with inter-layer laser shock peening. K. Huang, N. Chen	
Lunch • Sponsored by TRANSVALOR				

02:00 pm	JSTP prizes for Precision Forging • Chair: Kazuhiko Kitamura (Japan)			
	Auditorium	Azur 1	Azur 2	Siagne 1
03:05 pm	ICTP-546 - Influence of the identification procedures of the material model in accurate prediction of ISF forces. <i>E. Betaieb, J. Shin, Y. Lee, L. Duchêne, A. I. Taub, M. Banu, A. M. Habraken</i>	ICTP-589 - An identification method for dynamic anisotropic plasticity using the virtual field method and heterogeneous impact test. <i>J. Fu, Z. Yang, J. Luo, L. Qi</i>	ICTP-622 - Prof. Lihui Lang and his contribution to plastic forming technology. <i>X. Li, Y. Li</i>	ICTP-756 - Separation of the tools and identification of the numerical simulation parameters of the screw press dynamic model. <i>H. Song, C. Durand, R. Bigot</i>
03:25 pm	ICTP-395 - Examination of bending stress superposition effect on martensite transformation in austenitic stainless steels. <i>E. Mamros, L. Polec, F. Maaß, T. Clausmeyer, A. E. Tekkaya, J. Ha, B. Kinsey</i>	ICTP-686 - A Full-Field Calibration based on DIC for Parameter Identification of 3rd Gen AHSS. <i>F. Han, C. XU, H. Jiang</i>	ICTP-503 - Electrically-assisted incremental forming of Invar 36 sheet. <i>H. Zhou, Y. Zhu, X. Li, H. Dong, J. Hou, Y. Wang</i>	ICTP-413 - Deformation Behavior of Tool and Workpiece in Plate Compression. <i>K. Jo, T. Hakoyama, Z. Wang</i>
03:45 pm	ICTP-757 - Modelling multi-steps asymmetric rolling process: from experiment to numerical simulations. <i>F. Cazes, G. Vincze, I. Ionescu</i>	ICTP-748 - Anisotropic plasticity in a roll-bonded Fe-Al multilaminate. <i>G. Hanon, L. Delannay</i>		ICTP-149 - Simplified 3D finite element simulations of the manufacturing process-induced distortions in large bearing rings. <i>M. He, R. Scott Hyde</i>
04:05 pm	ICTP-474 - Influence of microstructure due to different cooling and heating rates on the mechanical behavior for inline processes. <i>A. Jhanji, B. Sydow, T.-E. Adams, S. Habisch, S. Härtel</i>	ICTP-553 - Numerical investigation on dissimilar Titanium-Aluminum T-joints produced by Friction Stir Welding: Process mechanics. <i>H. Rana, G. Buffa, F. Micari, L. Fratini</i>		ICTP-178 - Investigation on thermal effect induced by ultrasonic vibration on surface deformation behavior during micro-forging. <i>Z. Yin, M. Yang, R. Kitamura</i>
04:25 pm				
04:50 pm	Closure ceremony (including JSTP Award for Young Researchers by Chair T Kuboki and ICTP 2026 announcement)			
05:30 pm	Farewell Party			

JSTP prizes for Precision Forging • Chair: Kazuhiko Kitamura (Japan)				
Siagne 2	IBIS	Conseil	La Napoule 1	La Napoule 2
ICTP-430 - Forming limit of dual phase steel: an experimental and numerical investigation. <i>M. Müller, N. Fehlemann, T. Herrig, M. Könnemann, T. Bergs, S. Müns-termann</i>	ICTP-445 - Size effect on grain-scale statistics in micro metal forming. <i>F. Zhenyong, L. Heng, Z. Duo, F. Mingwang</i>	ICTP-671 - Asperity forming in rolling. <i>Y. Yoshikawa, T. Nishiyama, M. Sakamoto</i>	ICTP-460 - Review and analysis of manufacturing curved extrusion components. <i>K. Achchige Dulani Damintha Kuruppu, W. Zhou, Z. Shi, J. Lin</i>	ICTP-677 - Effects of tensile and compressive stresses on stress relaxation behavior and mechanical properties in an Al-Cu alloy. <i>Y. Yang, L. Zhan</i>
ICTP-381 - Approximation of Pressure Fields Generated by High-Voltage Discharges in Liquid on a Flat Wall. <i>M. Knyazyev, M. Holzmüller, W. Homberg</i>	ICTP-772 - A study on micro-extrusion process to develop lightweight Magnesium alloy based micro-components. <i>B. Venkatesh, S. K. Panigrahi</i>	ICTP-558 - Physical and numerical modeling of micro-extrusion behavior of AA3XXX Aluminum alloy in cold roll bonding. <i>M. Navidrad, J. Plumeri, N. Vermaak, M. Watanabe, W. Misiolek</i>	ICTP-418 - Refinement of Process Parameters in Rotary Draw Bending. <i>M. Ali Kaleem, B. Engel, P. Frohn-Sørensen, D. Nebeling</i>	ICTP-376 - User defined material modeling of woven fabric composites for strain rate dependency and nonlinear shear behaviors. <i>B. Ah-mad, S. Jayakumar, X. Fang</i>
ICTP-372 - Residual Stress Analysis in Thick Sheet Metal Forming of Aluminum AA7075 with Regard to Milling Finishing. <i>M. Ott, W. Volk</i>	ICTP-736 - Mechanical properties of Mn8/SS400 bimetal composites. <i>S. Yuan, H. Xie, H. Wu, X. Liang, S. Jiao, Z. Jiang</i>	ICTP-189 - Development of invers method to estimate stresses on the roll surface during rolling. <i>Y. Maeda, Y. Fujii, T. Shiraishi</i>	ICTP-210 - Online adaptive control in metal forming. <i>J. Ma, S. A. Tronvoll, T. Welo</i>	ICTP-433 - Residual stress prediction model for cold precision bulk forming of AISI 9310 steel. <i>X. Zeng, X. Fan</i>
ICTP-616 - Estimation of kinematic hardening of sheet metals based on stress-relaxation behavior. <i>K. Matsugi, K. Ikeda, T. Araki, R. Hino</i>	ICTP-465 - A front-tracking method to simulate the microstructural evolution in polycrystalline materials during hot metal forming. <i>S. Florez, M. Bernacki</i>	ICTP-801 - Manufacturing of High-Performance Magnesium Alloy Sheets via High Strain Rolling Process. <i>R. Kumar, S. Kumar Panigrahi</i>	ICTP-234 - Cryogenic formability potential of thin-walled aluminum alloy tube. <i>H. Sun, H. Li, H. Yang, M. Fu</i>	ICTP-320 - Towards the consideration of microstructural heterogeneities. <i>M. I. Farah, L. Tabourot, L. Chacraclaux, P. Balland, E. Roux</i>
ICTP-400 - A novel insight into plastic instability behavior from the mesoscopic-scale strain analysis in medium Mn steel. <i>S. Zhao, R. Song, Y. Zhang, W. Huo, X. Wang, X. Chen</i>	ICTP-369 - Exploring the potential of refining microstructure of metastable α alloy with an initial α -colony structure. <i>X. Fan, L. Wang</i>	ICTP-799 - Effect of Rolling reduction on tension compression yield asymmetry of AZ31 Magnesium Alloy. <i>S. Punyakanti, B. Narayana Sahoo</i>		
Closure ceremony (including JSTP Award for Young Researchers by Chair T Kuboki and ICTP 2026 announcement)				
Farewell Party				

10. Plenary Speakers

**Jian CAO***Northwestern University
(USA)***Machine Learning
in Advancing Metal
Processing Technologies**Monday, 25th
10:00 am – 10:45 am
Auditorium**ABSTRACT:**

The combination of the mechanics-driven and data-driven approaches have received increasing attention in both academic and industry. In this talk, I will post the challenges that we are facing to the broad manufacturing community and use two manufacturing processes, i.e., metal powder-based additive manufacturing and sheet metal forming as demonstration cases.

Specifically, I will show how the integration of the fundamental process mechanics, process control, and techniques including machine learning to achieve effective and efficient predictions of material's mechanical behavior due to or during a manufacturing process.

Our solutions particularly target three notoriously challenging aspects of the process, i.e., long history-dependent properties, complex geometric features, and the high dimensionality of their design space.

**Bernd-Arno BEHRENS***Leibniz Universität Hannover (Germany)***Digital Transformation in the World of Forging**Tuesday, 26th
08:30 am – 09:15 am
Auditorium**ABSTRACT:**

Digital tools are important aids for the optimisation of forging processes. Three approaches are presented here that support the process design, the process monitoring and the modelling.

The design of an economical staging sequence is characterised, for example, by fold- and crack-free forming with few forming steps and little excess material. In order to economically design a staging sequence for complex component geometries, a targeted design is necessary. Preforms should be designed in such a way that the mass distribution along the longitudinal axis is well approximated to the finished form. With conventional methods, such as the mass distribution diagram in 3D space, designing geometrically complex components is very time-consuming. In reality, stage sequences are often only designed in a shortened way, depending on the necessity or the possibilities of the respective company, and the design is often based on the experience knowledge of the employees or on already existing reference processes.

Here, an AI-based method for determining the mould parting line as well as for the automated design of economic stage sequences is presented. The method does not rely on reference processes of already existing staging sequences since the necessary information is automatically extracted from the forging geometry.

In addition, developments in the data-based process monitoring in die forging and the resulting improved numerical modelling for the wear calculation of forging dies are discussed.

Toshihiko KUWABARA*Tokyo University of Agriculture and Technology (Japan)***Advanced material testing methods for sheet metals**Monday, 25th
02:00 pm – 02:45 pm
Auditorium**ABSTRACT:**

Improvement of the predictive accuracy for defect formation (such as fracture and springback) is key to realizing trial-and-error-less manufacturing. In metal forming processes, materials are subjected to various multiaxial stresses and stress reversals. Therefore, the parameters of the material models used in finite element simulations should be determined using the material testing methods that accurately reproduce the stress states generated in real forming processes.

This lecture reviews the advanced material testing methods for sheet metals. Special attention is given to the anisotropic plastic deformation behavior of industrial materials and to the validation of the material models under both linear and nonlinear stress paths for large plastic strain ranges. In addition, examples of improving the accuracy of forming simulations by selecting appropriate material models are presented.

**Sandrine THUILLIER***Université de Bretagne Sud (France)***From homogeneous to heterogeneous mechanical testing
of metallic materials**Tuesday, 26th
09:15 am – 10:00 am
Auditorium**ABSTRACT:**

The strength of materials is an essential information in mechanical design and specific tests, like the tensile test, have been used since several centuries. Before necking, such a test is homogeneous and corresponds to a single mechanical state, defined by the stress and strain tensors.

With virtual mechanical design, there is a need for a large number of mechanical states to calibrate advanced models for hardening, anisotropy and rupture. Two trends are existing, either increasing the number of homogeneous tests or using few heterogeneous tests. In the last case, using full-field measurements and finite element simulations, the richness of the mechanical states of only one test is exploited to identify material parameters.

This presentation will focus on a review of heterogeneous tests for metallic sheets and on how to evaluate the quality and diversity of the information. As well as on methods to design heterogeneous tests and strengths and limitations of the approach. Is there a path toward a single, standardized heterogeneous test?



Julian ALLWOOD

*University of Cambridge
(United Kingdom)*

The role of metal forming in a world with zero emissions

Wednesday, 27th
09:30 am - 10:15 am
Auditorium

ABSTRACT:

Most countries of the world have now agreed targets to reaching zero emissions by mid-century. However, there is no agreement on how to deliver these commitments. The absence of a clear plan is a result of two incomplete approaches: politicians and the leaders of high-emitting businesses all proclaim that there is no need to constrain today's activities, because new technologies will make solution easier if we wait; meanwhile specialists in all disciplines attempt to reframe the problem to fit their existing methodologies, but in doing so, miss the essence of the problem – which is scale. As a result, emissions continue to rise, raising the risk of a devastating global famine this century.

To try to identify how the skills and expertise gathered at ICTP can contribute to a safe planet, this talk will begin by exploring the options for future supply of bulk materials. The most likely future, based on current technology trends, is for a radical reduction in total metal supply, which will mainly be provided by recycling.

Responding to this reduced supply requires that we make much better use of much less metal. Partly this depends on extending the life of metal-intensive goods, especially in construction, vehicles and large industrial equipment. This does not generally require innovation in metal forming technology.

However, following a century of virtually limitless supply of low-cost high-performance metal, we have become careless in its use: half of all sheet metal made annually is cut off as scrap during manufacturing; most components are over-designed by a factor of two or more. This sets the agenda for how metal forming technologists can contribute to making a safe planet. The talk will attempt to identify the areas where different technologies can make most impact and give recent examples of where innovation has begun to have scalable impact.



Pierre MONTMITONNET

Mines Paris PSL Research University (France)

Space-and time-varying friction in metal forming risks and opportunities, experimental and numerical assessment

Thursday, 28th
08:30 am - 09:15 am
Auditorium

ABSTRACT:

Friction is known as a difficult-to-assess input in metal forming. This is all the more damageable as it may have a huge impact on certain processes and the quality of their product. In spite of a large amount of research done and a vast literature, which friction law to choose and how to identify the corresponding coefficients remains a puzzle in most cases. This is due to multiple interacting mechanisms involving an almost unlimited number of variables.

Furthermore, these variables, e.g. contact conditions (contact pressure, temperature, sliding velocity, lubrication regime...) may vary across extended contacts, making it probable that friction coefficients be non-uniform. Transient friction may not be identical to steady state friction either : in general, friction may be space- and time-dependent.

In many situations, a reasonable compromise solution can be found, in that sensible and useful results can be obtained, with a single friction coefficient, constant in space and time. The purpose of this presentation is to review a few cases where this simplification does not hold, i.e. friction on different tools or at different stages of a process may not be considered identical without significant errors. Based on literature and personal recent work, examples of this will be described, e.g.

- Different roles of friction on rollers, guide shoes and plug in Mannesmann 2-roll piercing,
- Consequences of internal vs external friction in tube pilgering,
- Impact of friction on flow in mixed forward / backward extrusion,
- blankholder friction vs tool radii friction in deep drawing and stamping,

Some thoughts will be given to the measurement of such time- and space-dependent friction, either from the process itself using a sufficient number of observable data, usually by exploiting process modelling; or using different friction tests mimicking conditions on different tools / at different places, such as in deep drawing.

Tentative examples on how non-uniform friction is or could be used to optimize certain processes will finally be addressed.

Ming Wang FU

Hong Kong Polytechnic University (China)

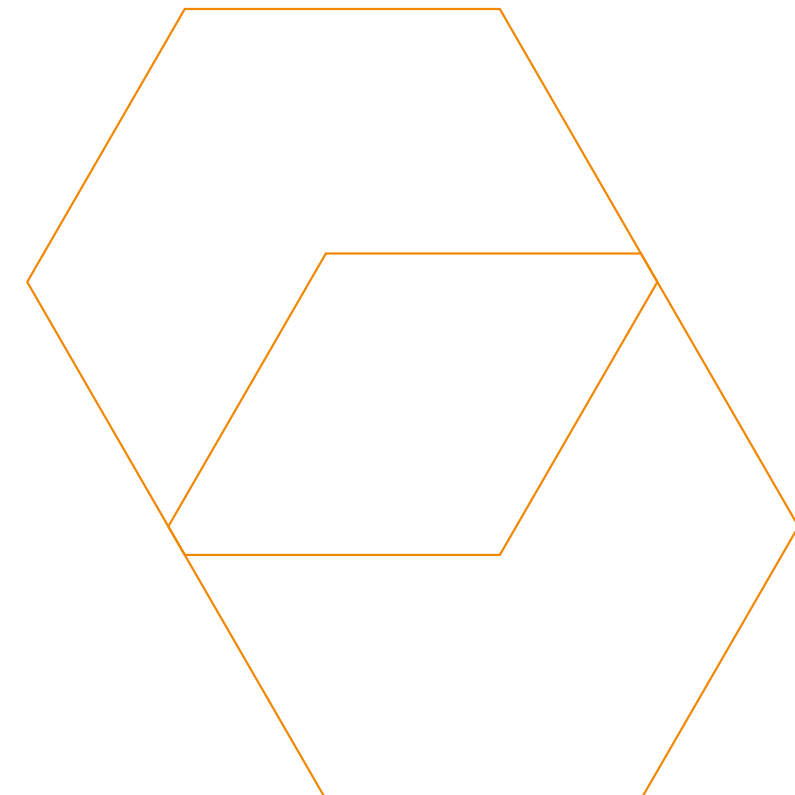
The past, present & future challenges in microforming

Thursday, 28th
09:15 am - 10:00 am
Auditorium

ABSTRACT:

Microforming is a promising micro-manufacturing process for fabrication of meso-/micro-scaled parts via plastic deformation of bulk or sheet materials. In microforming process, there are many unique behaviors and phenomena, which are different from those in macro-scaled forming processes, and thus result in different challenges in the past, present and future. In this talk, these challenges will be delineated and elucidated.

The size effects (SE) induced by different size-scaled factors and their manifestations will be outlined and discussed, and how the SEs generate size-dependent process behaviors, process performances, and the quality and properties of the fabricated microparts, and their scatters will be systematically explicated and thoroughly analyzed. By using microforming of sheet and wire metals as instances, the above-described challenges will be exemplified and characterized.



11 • Poster Session

We are delighted to have 34 excellent posters at ICTP 2023 and 4 exhibitors. They are all located in the ICTP 2023 Agora – the heart of the conference where the coffee breaks and lunch breaks will also take place. The posters are available during the entire conference and a formal Poster Session is scheduled for Wednesday, September 27, 11:40-12:30, for you to be able to meet and discuss with the poster authors.

ICTP-161	Hot stamping performance prediction <i>Seung Chae Yoon, Je Youl Kong, Jea Myoung Park, Kye Jeong Park, Ki Jung Kim, Joo Sik Hyun, Yoo Dong Chung</i>
ICTP-162	Influence of accelerated cooling for DSS on hot workability and mechanical properties <i>Shunsuke Sasaki, Tatsuro Katsumura, Masaru Miyake</i>
ICTP-174	Electrically Assisted Pressure Joining of Dissimilar Copper 1100 and Aluminum 6061-T6 Alloys <i>Tu-Anh Bui-Thi, Thanh-Thuong Do, Sung-Tae Hong, Si-Hwan Lee, Heung Nam Han</i>
ICTP-188	AI hot stamping using volatile medium and die quenching <i>Lihong Cai, Meiling Geng, Jin-Cheol Kim, Sung-Tae Hong</i>
ICTP-217	Reduction of Elongation Anisotropy in A356 Alloy Sheet Cold-Rolled and Annealed from High-Speed Twin-Roll Cast Strips <i>Yohei Harada, Genki Uruno, Shinji Kumai</i>
ICTP-243	FEM/DEM adaptive remeshing strategy <i>Farouk Yahya, Cédric Hubert, Nicolas Leconte, Laurent Dubar</i>
ICTP-249	Data Assimilation for temperature evaluation in Resistance Heating-assisted Micro-forming <i>Chihiro Machida, Ming Yang</i>
ICTP-357	Data Visualization and Monitoring of Hot Forging Process <i>A Ra Jo, Cheol Hwan Oh, Ji Seob An, Myeong Sik Jeong, Young Hoon Moon, Sun Kwang Hwang</i>
ICTP-398	A method to evaluate high strain flow stress curve using simple compress test and indentation test <i>Sang-Kon Lee, Sung-Min Lee, In-Kyu Lee, Sung-Yun Lee, Sung-Kwang Hwang, Dongyong Park, Dae-Cheol Ko</i>
ICTP-417	Effect of heat treatment on microstructure and properties of 1800MPa ultra-high strength hot-stamping steel <i>Xinwei Wang, Renbo Song, Yongjin Wang, Xinghan Chen, Weifeng Huo, Shuai Zhao</i>
ICTP-425	An Equivalent Approach for Energy Estimation of Underwater Electrical Wire Explosion in Electrohydraulic Forming <i>Changxing Li, Mengyuan Gong, Wei Xu, Yang Hu, Zhipeng Lai, Quanliang Cao, Xiaotao Han, Liang Li</i>
ICTP-428	Water-augmented vaporizing foil actuator for impact welding of dissimilar metals <i>Mengyuan Gong, Wei Xu, Changxing Li, ZhiPeng Lai, Quanliang Cao, Xiaotao Han, Liang Li</i>
ICTP-429	High scalable methodology for electromagnetic forming of large sheet metal parts with a spatial-distributed coil array <i>Wei Xu, Mengyuan Gong, Changxing Li, Zhipeng Lai, Quanliang Cao, Xiaotao Han, Liang Li</i>
ICTP-469	Influence of forming cycles on the mechanical properties and tribological behaviour of hot forging tools <i>Nasrine Boualem, Mirentxu Dubar, Philippe Moreau, Laurent Dubar, Philippe Bristiel</i>
ICTP-484	Experimental studies on double-sided incremental forming of thermoset fiber reinforced fabrics <i>Peng Xu, Xiaoqiang Li, Yanfeng Yang, Weizhao Zhang, Xiaobing Li, Fei Feng</i>

ICTP-488	Analysis of deformation texture formed by spinning of low carbon steel sheet <i>Shiori Gondo, Hirohiko Arai</i>
ICTP-497	Tooling design of biaxial compression test with variable loading path for bulk metal materials <i>Hongzhi Fan, Haibo Wang, Xiaoqiang Li, Hongrui Dong</i>
ICTP-615	Characterization and modeling of multi-pass cold drawing of thick steel plate <i>Joséphine Chatellier, Pierre-Olivier Bouchard, Christophe Pradille, Christophe Kerisit</i>
ICTP-628	NbC-reinforced Ti composites manufactured by Equal Channel Angular Pressing (ECAP) and Spark Plasma Sintering (SPS) <i>William De Paula Santos, Sydney Ferreira Santos, Anibal de Andrade Mendes Filho, Jean-Louis Bobet</i>
ICTP-629	The 3D cellular automata diffusive phase transformations model for cooling processes <i>Mariusz Werminski, Mateusz Sitko, Lukasz Madej</i>
ICTP-647	Wire drawing using crystal orientation rotation <i>Satoshi Kajino</i>
ICTP-654	Prediction of microstructure for Inconel718 laser welding process using multi-scale model <i>Yukai Chen, Hongtu Xu, Yu Lu, Yin Wang, Ke Huang, Qi Zhang</i>
ICTP-656	Application of rolling deformation method in improving microstructure and material properties <i>Xu Hongtu, Tian Tiantai, Li Hao, Chen Yukai, Han Bin, Zhang Qi</i>
ICTP-665	Simulation of ultrasonic wave propagation in polycrystalline materials <i>Adrien Talatizi, Marc Bernacki</i>
ICTP-679	Effects of Air Resistance on Thin Metallic Sheet Deformation during Electromagnetic Forming <i>Yao Chen, Zelin Wu, Pengxin Dong, Yifan Huang, Runze Liu, Quanliang Cao, Liang Li, Xiaotao Han</i>
ICTP-680	Phase field ductile fracture modeling applied to underwater explosions tests of thick steel plates <i>Valentin Duvivier, Pierre-Olivier Bouchard, Guillaume Corvec, Daniel Pino-Munoz, Bruno Leblé</i>
ICTP-690	Anisotropic plasticity modelling for metal forming applications <i>Mohamed Abatour, Basava Raju Akula, Amar El Ouazani Tuhami, Nikolay Osipov, Stéphane Quilici, Gilles Rousselier</i>
ICTP-713	Deformation characteristic of vacuum-assisted incremental sheet forming considering multi tool paths <i>Hyung-Won Youn, Chang-Whan Lee, Minki Kim, Jongsup Lee, Hoon Huh, Namsu Park</i>
ICTP-727	Springback control of electromagnetic forming with thin layer of rubber for ultra-thin titanium plate <i>Yifan Huang, Zelin Wu, Pengxin Dong, Runze Liu, Yao Chen, Quanliang Cao, Liang Li, Xiaotao Han</i>
ICTP-737	Flow stress characteristics and recrystallization kinetics in novel medium-Mn steels <i>Aleksandra Kozłowska, Adam Skowronek, Wojciech Borek, Adam Grajcar</i>
ICTP-739	Effect of plastic deformation on continuous cooling and isothermal transformation diagrams of medium-Mn steel <i>Aleksandra Kozłowska, Barbara Grzegorzcyk, Mateusz Morawiec, Adam Grajcar</i>
ICTP-752	Evaluation of the twinning-detwinning behavior of CP-Ti in cryogenic low-cycle fatigue <i>Ji-Seob An, Min-Ji Jo, A-Ra Jo, Myeong-Sik Jeong, Sang-Kon Lee, Sun-Kwang Hwang</i>
ICTP-759	IDMEC, Instituto Superior Técnico <i>Ana Rosa-Sainz, Inés Ferrer, María Luisa García-Romeu, M. Beatriz Silva, Gabriel Centeno</i>
ICTP-764	Derivation and Monitoring of Defect Cause Variables through Machine Learning-based Approach in Powder-Forming Process <i>Cheol-hwan Oh, Ji-Seob An, A-Ra Jo, Myeong-Sik Jeong, Dong-yong Park, Sun-Kwang Hwang</i>
ICTP-783	Roll tap process of parameters optimization and roll tapping machine equipment development <i>Seon-Ho Jung, Young-Jin Kim, Taehoon Choi, Minsu Kim, Jongsup Lee</i>

12. Industrial & Cultural Visits

Friday, September 29th - Departure from Mandelieu

VISIT 1 TESCAN



Accompanying persons from ICTP Organization

- Charbel Moussa (charbel.moussa@minesparis.psl.eu)
- Emergency phone number: +33 6 48 94 95 99

Important Information

Participants must take their ID/passport + their ICTP badge.

Details

07:15 am	Meeting point in front of the CEC for the bus
08:00 – 9:30 am	Bus trip from Mandelieu congress center to TESCOAN
09:30 – 10:00 am	TESCAN Welcome & coffee
10:00 – 12:00 am	Visit & Workshops (group of 5 to 7 persons)
12:00 – 01:30 am/pm	Lunch on site
01:30 – 03:30 pm	Visit & Workshops (group of 5 to 7 persons)
03:30 – 04:00 pm	Conclusion and Departure
04:00 – 05:30 pm	Bus trip back to Mandelieu congress center

VISIT 2 TEAM HENRI FABRE AIRBUS HELICOPTERS



Accompanying persons from ICTP Organization

- Régis Bigot (regis.bigot@ensam.eu)
- Emergency phone number: +33 6 63 78 88 41

Important Information

Participants must take their ID/passport + their ICTP badge.

Details

Group A (25 pers.)	Group B (25 pers.)
07:30 am	Meeting point in front of the CEC for bus
08:15 – 10:15 am	Bus trip from Mandelieu congress center to Marignane
10:15 – 12:30 am	Visit Airbus Visit THF
12:30 – 02:00 am/pm	Lunch THF
02:00 – 04:00 pm	Visit THF Visit Airbus
04:00 – 06:00 pm	Bus trip back to Mandelieu congress center

VISIT 3 CNIM VIGNOLE FIGUIÈRE



Accompanying persons from ICTP Organization

- Tudor Balan (tudor.balan@ensam.eu)
- Emergency phone number: +33 6 11 91 99 67

Important Information

Participants must take their ID/passport + their ICTP badge + wear closed shoes.

Details

Group A (15 pers.)	Group B (15 pers.)
07:15 am	Meeting point in front of the CEC for bus
08:00 – 09:45 am	Bus trip from Mandelieu congress center to La Seyne-sur-mer
09:45 – 10:00 am	On site check-in
10:00– 10:45 am	Workshop visit Presentations
11:00 – 11:45 am	Presentations Workshop visit
11:45 – 02:00 am/pm	Lunch
02:00 – 04:00 pm	Figuere Vineyard visit
04:00 – 05:30 pm	Bus trip back to Mandelieu congress center

VISIT 4 TRANSVALOR – CEMEF VERRERIE DE BIOT



Accompanying persons from ICTP Organization

- François Bay (francois.bay@minesparis.psl.eu)
- Emergency phone number: +33 6 95 23 20 15 (Pierre-Olivier Bouchard)

Important Information

Participants must take their ID/passport + their ICTP badge.

Details

Group A (16 pers.)	Group B (16 pers.)
07:30 am	Meeting point in front of the CEC for bus
08:00 – 08:30 am	Bus trip from Mandelieu congress center to CEMEF
08:30 – 08:45 am	Welcome CEMEF
09:00 – 10:30 am	Visit CEMEF
10:30 – 12:30 am	Forge® Training @ Cemef Visit of Biot glass factory
12:30 – 02:00 am/pm	Lunch @Transvalor
02:00 – 04:00 pm	Visit of Biot glass factory Forge® Training @Transvalor
04:00 – 5:00 pm	Bus trip back to Mandelieu congress center

Industrial & Cultural Visits

Friday, September 29th - Departure from Mandelieu

VISIT 5 SAVIMEX - FRAGONARD



Accompanying persons from ICTP Organization

- Pierre-Olivier Bouchard (pierre-olivier.bouchard@minesparis.psl.eu)
- Emergency phone number: +33 6 95 23 20 15

Important Information

Participants must take their ID/passport + their ICTP badge.

Details

08:00 am	Meeting point in front of the CEC for bus
09:00 - 09:30 am	Bus trip from Mandelieu congress center to SAVIMEX
09:30 - 12:00 am	SAVIMEX presentation and visit
12:00 - 01:30 am/pm	Lunch
01:30 - 02:00 pm	Bus to Fragonard Flower Factory (17 Route de Cannes, 06130 Grasse)
02:00 - 03:30 pm	Fragonard presentation of the company and its history, a visit of the museum
03:30 - 04:00 pm	Mini-perfume Workshop on the Narcisse flower
04:00 - 04:30 pm	Bus trip back to Mandelieu congress center

Notes

13. Social Program

WELCOME PARTY

(included in your fees)

Sunday, September 24th from 06:30 pm

→ **Lagon Mandelieu**
930 Avenue de la mer
06210 Mandelieu

Meet on site (individual access, no shuttle).
The Welcome Party is a 12-minute walk from the Mandelieu Conference Center.
It is not necessary to pass through the conference center before attending the Welcome Party.

BANQUET NETWORKING EVENT

(according to your pre-registration options)

Tuesday, September 26th from 04:30 pm

→ **Hyatt Regency Nice Palais De La Méditerranée**
13 Promenade des Anglais
06000 Nice

→ Meeting point for shuttle at the conference center CEC

Free late afternoon in the center of Nice.
Cocktail and seated dinner at the Hyatt Regency Nice Palais De La Méditerranée.
Evening hosted by a talented magician.
Return to Mandelieu by shuttle after dinner.

Cloakroom available at the Hyatt from 05:30 to 11:00 pm

FAREWELL PARTY

(included in your fees)

Thursday, September 28th from 05:30pm

→ **CEC Congress center of Mandelieu**
Conference venue



14. Accompanying Person Program

WELCOME PARTY

(included in your fees)

Sunday, September 24th from 06:30 pm

→ **Lagon Mandelieu**
930 Avenue de la mer
06210 Mandelieu

Meet on site (individual access, no shuttle).
The Welcome Party is a 12-minute walk from the Mandelieu Conference Center.
It is not necessary to pass through the conference center before attending the Welcome Party.

BANQUET NETWORKING EVENT

(included in your fees)

Tuesday, September 26th from 04:30 pm

→ **Hyatt Regency Nice Palais De La Méditerranée**
13 Promenade des Anglais
06000 Nice

→ Meeting point for shuttle at the conference center CEC

Free late afternoon in the center of Nice.
Cocktail and seated dinner at the Hyatt Regency Nice Palais De La Méditerranée.
Evening hosted by a talented magician.
Return to Mandelieu by shuttle after dinner.

Cloakroom available at the Hyatt from 05:30 to 11:00 pm

CULTURAL VISIT

(included in your fees)

Wednesday, September 27th from 01:00 pm

1/2 day in Gourdon and visit to the Florian Confectionery.
→ Departure by shuttle from the CEC Congress center of Mandelieu (conference venue)

FAREWELL PARTY

(included in your fees)

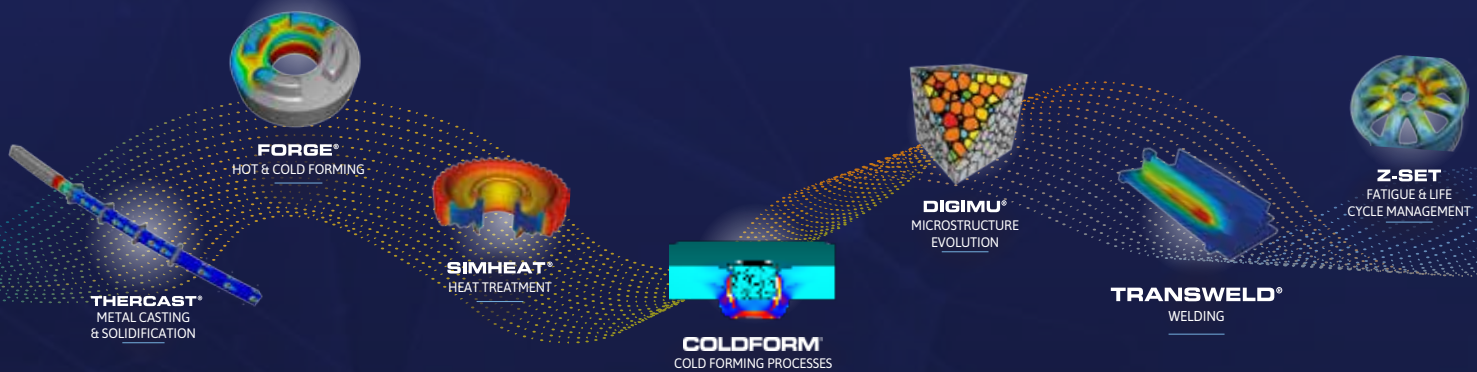
Thursday, September 28th from 05:30pm

→ **CEC Congress center of Mandelieu**
Conference venue





AN END-TO-END SOLUTION PLATFORM TO REINVENT **TOGETHER** DIGITAL MANUFACTURING



THE NEW GENERATION OF SIMULATION

A THOUGHTFUL PRODUCTION CHAIN THAT
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AND THE **REDUCTION OF YOUR CO₂ EMISSIONS**

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Start by simulating continuous casting, continue your analysis to study rolling, and control the porosity closure rate. Simulate heat treatments applied to your components and track microstructural changes on various macroscopic and mesoscopic scales, as well as on Representative Volume Element (RVE). To ensure part quality, perform structural calculations under complex thermo-mechanical loading conditions.