

JCM
2022
1st - 3rd June
Ischia Italy



INTERNATIONAL JOINT CONFERENCE ON MECHANICS, DESIGN ENGINEERING & ADVANCED MANUFACTURING

Conference Program





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On behalf of the Organizing Committee of the JCM 2022 International Conference, We are pleased to welcome you to Ischia. We hope you will enjoy firstly the opportunity of an exciting and challenging scientific debate secondly one of the most welcoming locations in the world.

We thanks the International Scientific Committee with the international reviewers, that has carried out the peer review process of the papers submitted in order to improve the quality of the conference.

Finally We thanks the Sponsors, that have contributed to the success of JCM 2022 and will contribute even more to everyday work in our labs. Finally thank you all for attending the conference.

Enjoy your stay

Antonio Lanzotti, Salvatore Gerbino
Conference Chair



Wednesday 1st June 2022

9:30-18:30	Welcome Desk Registrations (Entrance)		Sponsor Exhibition (Open Space)		
	10:30-11:00	Coffee Break (Open Space)			
	11:00-12:00	Conference Opening: Greetings from the authorities (Plenary Room)			
	12:00-13:20	Room 1 Session 1.Track1 Des Met and Tools	Room 2 Session 1.Track2 Geo Mod and Analysis	Room 3 Session 1.Track3 Adv Man and Control	Room 4 Session 1.Track4 X-Reality for Int Design
	13:20-14:20	Welcome Cocktail (Open Space)			
	14:20-15:40	Room 1 Session 2.Track1 Des Met and Tools	Room 2 Session 2.Track2 Geo Mod and Analysis	Room 3 Session 2.Track3 Adv Man and Control	Room 4 Session 2.Track4 X-Reality for Int Design
	15:40-16:00	Coffee Break (Open Space)			
	16:00-16:45	Keynote Speaker 1: Prof. Stephan Odenwald (Plenary Room)			
	16:45-17:30	Keynote Speaker 2: Dr. Guido Porro (Plenary Room)			
	17:30-18:30	Room 1 Session 3.Track1 Des Met and Tools	Room 2 Session 3.Track2 Geo Mod and Analysis	Room 3 Session 3.Track3 Adv Man and Control	Room 4 Session 4.Track1 Des Met and Tools

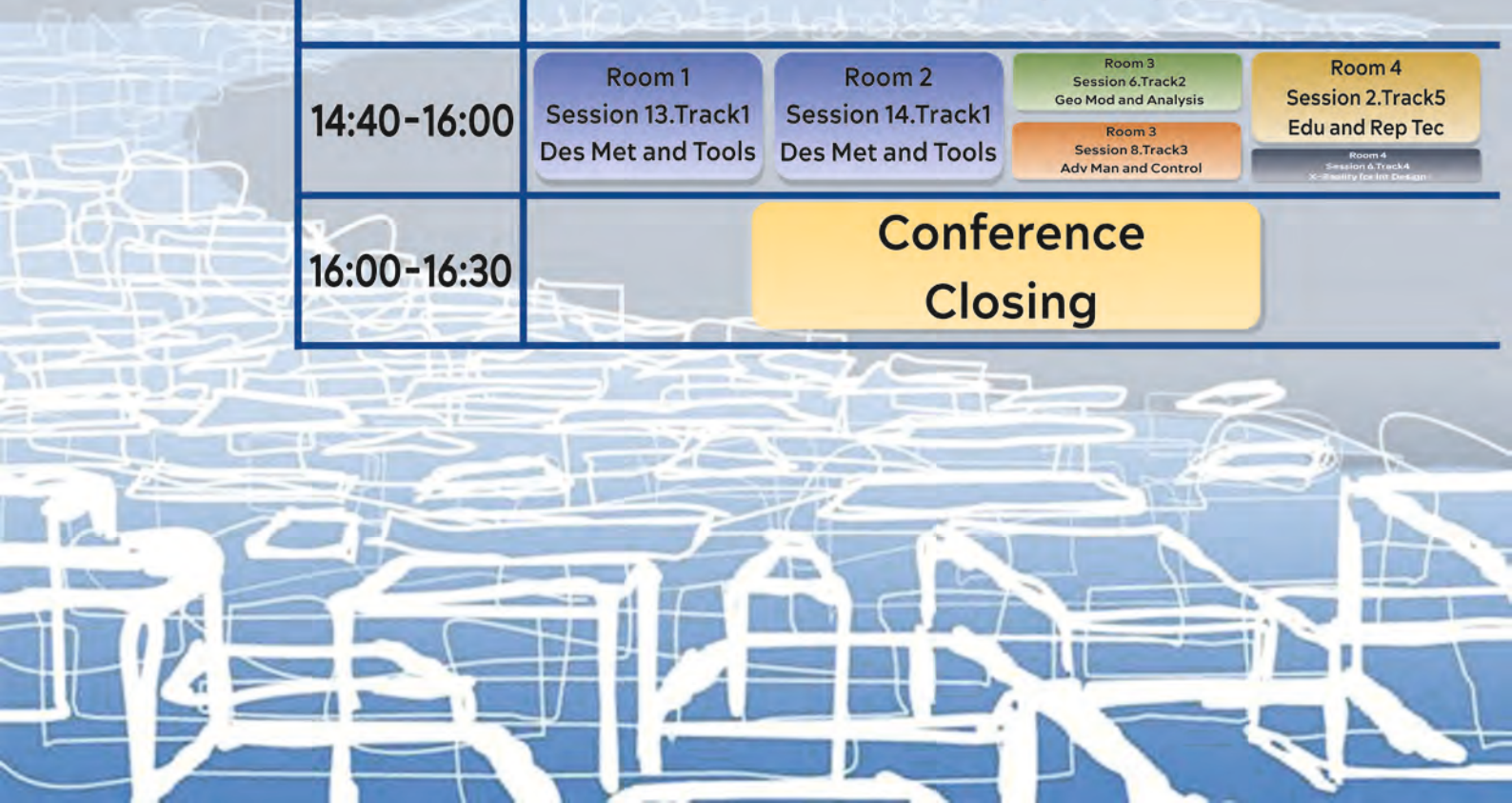
Room 4
Session 4.Track1
Des Met and Tools

Thursday 2nd June 2022

9:00-19:00	Welcome Desk Registrations (Entrance)		Sponsor Exhibition (Open Space)		
	09:00-10:20	Room 1 Session 5.Track1 Des Met and Tools	Room 2 Session 4.Track2 Geo Mod and Analysis	Room 3 Session 4.Track3 Adv Man and Control	Room 4 Session 3.Track4 X-Reality for Int Design
	10:20-11:00	Coffee Break (Open Space)			
	11:00-12:00	Keynote Speaker 3: Prof. Vincent Cheutet (Plenary Room)			
	12:00-13:20	Room 1 Session 6.Track1 Des Met and Tools	Room 2 Session 7.Track1 Des Met and Tools	Room 3 Session 5.Track3 Adv Man and Control	Room 4 Session 8.Track1 Des Met and Tools
	13:20-14:20	Lunch Break (Open Space)			
	14:20-15:40	Room 1 Session 1.TrackSR Design for Soft Robotics	Room 2 Sponsor Presentations	Room 3 Session 6.Track3 Adv Man and Control	Room 4 Session 9.Track1 Des Met and Tools
	15:40-16:00	Coffee Break (Open Space)			
	16:00-17:00	Room 1 Session 2.TrackSR Design for Soft Robotics	Room 2 Session 5.Track2 Geo Mod and Analysis	Room 3 Session 10.Track1 Des Met and Tools	Room 4 Session 4.Track4 X-Reality for Int Design
	17:00-19:00	ADM MEETING (Plenary Room)			
	20:15-23:15	GALA DINNER			

Friday 3rd June 2022

9:00-14:40	Welcome Desk Registrations (Entrance)		Sponsor Exhibition (Open Space)	
	09:00-10:20	Room 1 Session 11.Track1 Des Met and Tools	Room 2 Session 12.Track1 Des Met and Tools	Room 3 Session 4.Track3 Adv Man and Control Room 3 Session 5.Track4 Adv Man and Control
	10:20-11:10	Third Mission Experience Talk: Kinder +Sport Ferrero (Plenary Room)		
	11:10-11:30	Coffee Break (Open Space)		
	11:30-12:15	Keynote Speaker 4: Prof. Valentin Gomez (Plenary Room)		
	12:15-13:30	POSTER SESSION (Open Space)		
	13:30-14:40	Lunch Break (Open Space)		
	14:40-16:00	Room 1 Session 13.Track1 Des Met and Tools	Room 2 Session 14.Track1 Des Met and Tools	Room 3 Session 6.Track2 Geo Mod and Analysis Room 3 Session 8.Track3 Adv Man and Control
	16:00-16:30	Conference Closing		





Technical Program



Conference *Chairs*

Antonio LANZOTTI, Università degli Studi di Napoli Federico II (Italy)

Salvatore GERBINO, Università degli Studi della Campania Luigi Vanvitelli (Italy)

Conference *Advisory Chairmen*

Vincenzo NIGRELLI, Università degli Studi di Palermo (Italy), ADM President

Ramón MIRALBES BUIL, Universidad de Zaragoza (Spain), IG President

Lionel ROUCOULES, Ecole Nationale Supérieure d'Arts et Métiers (France), S.mart President

Scientific *Committee Coordinator*

Caterina RIZZI, Università degli Studi di Bergamo (Italy)

Organizing *Committee*

Antonio LANZOTTI, Università degli Studi di Napoli (Italy)

Stanislao PATALANO, Università degli Studi di Napoli (Italy)

Massimo MARTORELLI, Università degli Studi di Napoli (Italy)

Salvatore GERBINO, Università degli Studi della Campania (Italy)

Francesco CAPUTO, Università degli Studi della Campania (Italy)

Alessandro GRECO, Università degli Studi della Campania (Italy)

Giuseppe DI GIRONIMO, Università degli Studi di Napoli (Italy)

Fabrizio RENNO, Università degli Studi di Napoli (Italy)

Andrea TARALLO, Università degli Studi di Napoli (Italy)

Ferdinando VITOLO, Università degli Studi di Napoli (Italy)

Teodorico CAPORASO, Università degli Studi di Napoli (Italy)

Stanislao GRAZIOSO, Università degli Studi di Napoli (Italy)

Tommaso INGRASSIA, Università degli Studi di Palermo (Italy)

Giuseppe MARANNANO, Università degli Studi di Palermo (Italy)

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Donato PERFETTO, Università degli Studi della Campania (Italy)

Alessandro DE LUCA, Università degli Studi della Campania (Italy)

Giuseppe LAMANNA, Università degli Studi della Campania (Italy)

Scientific *Committee*

Track *General Chair*

Massimo MARTORELLI, Università degli Studi di Napoli (Italy)

Track *Chairs*

Design Methods and Tools

Paz MORER-CAMO (Ingegraf)

Julien LE DUIGOU (S.Mart)

Francesco LEALI (ADM)

Antonio MANCUSO (ADM, Co-Chair for "Design for Sustainability and EcoDesign")

Daniele REGAZZONI (ADM, Co-Chair for "Engineering Methods in Medicine")

Geometric Modelling and Analysis

Francisco CAVAS MARTINEZ (Ingegraf)

Frédéric DEMOLY (S.Mart)

Enrico VEZZETTI (ADM)

Advanced Manufacturing and Control

Francesca CAMPANA (ADM)

Sébastien CAMPOCASSO (S.Mart)

Rikardo MINGUEZ GABIÑA (Ingegraf)

X-Reality for Interactive Design

Frédéric NOËL (S.Mart)

David RANZ ANGULO (Ingegraf)

Antonio Emmanuele UVA (ADM)

Education and Representation Techniques

Gianmaria CONCHERI (ADM)

Cristina MANCHADO del VAL (Ingegraf)

Lionel ROUCOULES (S.Mart)

ADM

Giovanni BERSELLI (University of Genova)

Francesca CAMPANA (University of Roma Sapienza)

Giorgio COLOMBO (Polytechnic of Milano)

Gianmaria CONCHERI (University of Padova)

Ilaria CRISTOFOLINI (University of Trento)

Luca DI ANGELO (University of L'Aquila)

Lapo GOVERNI (University of Firenze)

Francesco LEALI (University of Modena and Reggio Emilia)

Antonio MANCUSO (University of Palermo)

Maurizio MUZZUPAPPA (University of Calabria)

Salvatore Massimo OLIVERI (University of Catania)

Armando Viviano RAZIONALE (University of Pisa)

Daniele REGAZZONI (University of Bergamo)

Antonio Emmanuele UVA (Polytechnic of Bari)

Enrico VEZZETTI (Polytechnic of Torino)

S.Mart

Alex BALLU (Université de Bordeaux)

Sébastien CAMPOCASSO (Université de Toulon)

Vincent CHEUTET (INSA Lyon)

Jean-Yves DANTAN (Arts et Métiers - Metz)

Frédéric DEMOLY (Université de technologie de Belfort-Montbéliard)

Emmanuel DUC (SIGMA Clermont)

Alexandre DURUPT (Université de Technologie de Compiègne)

Xavier FISHER (ESTIA Bidart)

Florent LAROCHE (Ecole Centrale Nantes)

Julien LE DUGOU (Université de Technologie de Compiègne)

Frédéric NOËL (Grenoble INP)

Manuel PAREDES (INSA Toulouse)

Maud RIO (Université Grenoble Alpes)

Lionel ROUCOULES (Arts et Métiers - Aix-en-Provence)

Nadège TROUSSIER (Université de technologie de Troyes)

Ingegraf

Fernando J. AGUILAR TORRES (University of Almería)

Elidia Beatriz BLÁZQUEZ PARRA (University of Málaga)

Paz MORER-CAMO (University of Navarra)

Francisco CAVAS MARTINEZ (Technical University of Cartagena)

Oscar David DE COZAR MACIAS (University of Malaga)

Valentín GOMEZ JAUREGUI (University of Cantabria)

Maider ITURRONDOBEITIA ELLACURIA (University of the Basque Country)

Ismael LENGUA LENGUA (Polytechnic University of Valencia)

Cristina MANCHADO del VAL (University of Cantabria)

Rikardo MINGUEZ GABIÑA (University of Basque Country)

Cesar Antonio OTERO GONZALEZ (University of Cantabria)

Guillermo PERIS FAJARNES (Polytechnic University of Valencia)

David RANZ ANGULO (University of Zaragoza)

José Ignacio ROJAS SOLA (University of Jaen)

Irene SENTANA GADEA (University of Alicante)

Erlantz LIZUNDIA (University of the Basque Country)



Conference Opening Greetings from the authorities

Hotel Continental - Ischia - Plenary Room

Wednesday 01/06/2022, 11:00 - 12:00

Session 1 – Track 1: Design Methods and Tools

Hotel Continental - Ischia - Room 1

Wednesday 01/06/2022, 12:00 - 13:20

Chairman: Giovanni BERSELLI

12:00 - 12:20 – Paper #237

Basic design and virtual prototyping of a hydrofoil hybrid daysailer.

Authors: PAPA, Stefano; SPERANZA, Domenico; DI BERNARDO, Romolo; MARTORELLI, Massimo; GLORIA, Antonio; PENSA, Claudio.

On-site presentation.

12:20 – 12:40 – Paper #138

Industrial scraps valorization: designing products to make detached value chains circular.

Authors: CAPPELLETTI, Federica; ROSSI, Marta; CICCARELLI, Marianna; GERMANI, Michele.

On-line presentation.

12:40 – 13:00 – Paper #155

A step forward Life Cycle Assessment to optimize products and increase company eco-design competencies.

Authors: ROSSI, Marta; CAPPELLETTI, Federica; GERMANI, Michele.

On-line presentation.

13:00 – 13:20 – Paper #132

Life cycle assessment of a tiny house made with sustainable materials and design implications.

Authors: RUIZ-PASTOR, Laura; ALTAVILLA, Stefania; NEZZI, Chiara; BORGIANNI, Yuri; ORZES, Guido.

On-site presentation.

Session 1 – Track 2: Geometric Modelling and Analysis

Hotel Continental - Ischia - Room 2

Wednesday 01/06/2022, 12:00 - 13:20

Chairman: Salvatore GERBINO

12:00 - 12:20 – Paper #171

Geometric Analysis of Product CAD Models to Support Design for Assembly.

Authors: RAFFAELI, Roberto; BONINO, Brigida; GIANNINI, Franca; MONTI, Marina; BERSELLI, Giovanni.

On-site presentation.

12:20 – 12:40 – Paper #140

Generative design in bicycle frames: A review.

Authors: GOMEZ-JAUREGUI, Valentin; VIGIL-FERNANDEZ, Carlos; MANCHADO, Cristina; OTERO, Cesar.

On-site presentation.

12:40 – 13:00 – Paper #109

On the adoption of the STEP neutral format for procedural mechanical CAD models.

Authors: COMPANY, Pedro; CAMBA, Jorge D.; PATALANO, Stanislao; LANZOTTI, Antonio.

On-site presentation.

13:00 – 13:20 – Paper #242

An augmented reality framework for remote factory acceptance test: an industrial case study.

Authors: TARALLO, Andrea; ANGELINO, Antimo; MARTORELLI, Massimo; COSENZA, Chiara; PAPA, Stefano; MONTELEONE, Antonio; LANZOTTI, Antonio.

On-site presentation.

Session 1 – Track 3: Advanced Manufacturing and control

Hotel Continental – Ischia – Room 3

Wednesday 01/06/2022, 12:00 – 13:20

Chairman: Ilaria CRISTOFOLINI

12:00 – 12:20 – Paper #126

Influence of TPU lattice structures on functional properties for the design of customized rehabilitation products.

Authors: DE LA ROSA, Sergio; MAYUET, Pedro F.; PARDO-VICENTE, Miguel-Angel; RODRÍGUEZ – PARADA, Lucía.

On-line presentation.

12:20 – 12:40 – Paper #235

Directed Energy Deposition process simulation to sustain Design for Additive Remanufacturing approaches.

Authors: DALPADULO, Enrico; PINI, Fabio; LEALI, Francesco.

On-site presentation.

12:40 – 13:00 – Paper #133

Preliminary design method accounting for shape distortion in Metal Binder Jetting parts: a case study.

Authors: ZAGO, Marco; PERINA, Matteo; CRISTOFOLINI, Ilaria.

On-site presentation.

13:00 – 13:20 – Paper #163

Could the airframe of the future be made of metal only? Potential of AM in the helicopter domain.

Authors: LASSO PERDOMO, Cristian Javier; MILLET, Dominique; Orquera, MYRIAM; Gabriel, Bertrand; DE DOMINICI, Gregory.

On-site presentation.

Session 1 – Track 4: X-Reality for Interactive Design

Hotel Continental – Ischia – Room 4

Wednesday 01/06/2022, 12:00 – 13:20

Chairman: Michele FIORENTINO

12:00 – 12:20 – Paper #122

Exploring people's visual perception and its impact on evaluation of a tiny house prototype using eye tracking technology.

Authors: BERNI, Aurora; NEZZI, Chiara; RUIZ-PASTOR, Laura; ALTAVILLA, Stefania; KOFLER, Ingrid; BORGIANNI, Yuri.

On-site presentation.

12:20 – 12:40 – Paper #224

A Mixed Reality Application for Collaborative and Interactive Design Review and Usability Studies.

Authors: SANTHOSH, Sandhya; DE CRESCENZIO, Francesca.

On-site presentation.

12:40 – 13:00 – Paper #207

HRV analysis through the sphygmoc wave pulsation of the femoral artery.

Authors: VILLECCO, Francesco; SALVATI, Luca; CAPPETTI, Nicola; D'AMORE, Matteo; FIORENTINO, Anita; PELLEGRINO, Arcangelo; SENA, Pasquale.

On-site presentation.

13:00 – 13:20 – Paper #164

Posture interactive self evaluation algorithm based on Computer Vision.

Authors: SALMERI, Fabio; BARBERI, Emmanuele; CHILLEMI, Massimiliano; CUCINOTTA, Filippo; MILARDI, Demetrio; RAFFAELE, Marcello; SFRAVARA, Felice.

On-site presentation.

Session 2 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 1

Wednesday 01/06/2022, 14:20 – 15:40

Chairman: Raúl MARTÍNEZ-CUENCA

14:20 – 14:40 – Paper #175

Optimizing racing wheelchair design through coupled biomechanical-mechanical simulation.

Authors: LONDON, Yann; LOISEAU, Adrien; MARSAN, Thibault; NAVARRO, Pablo; WATIER, Bruno.

On-site presentation.

14:40 – 15:00 – Paper #218

Numerical optimization of a composite sandwich panel with a novel bi-directional corrugated core using an animal-inspired optimization algorithm.

Authors: MARANNANO, Giuseppe; INGRASSIA, Tommaso; RICOTTA, Vito; NIGRELLI, Vincenzo.

On-site presentation.

15:00 – 15:20 – Paper #145

Application of neural networks for smart tightening of aeronautical bolted assemblies.

Authors: FOISSAC, Charly; DAIDIE, Alain; SEGONDS, Stéphane; CHIROL, Clément.

On-site presentation.

15:20 – 15:40 – Paper #215

Enhancing Human-Robot Collaboration in the Industry 5.0 Context: Workplace Layout Prototyping.

Authors: DI MARINO, Castrese; REGA, Andrea; VITOLO, Ferdinando; PATALANO, Stanislaw.

On-site presentation.

Session 2 – Track 2: Geometric Modelling and Analysis

Hotel Continental – Ischia – Room 2

Wednesday 01/06/2022, 14:20 – 15:40

Chairman: Clement CHIROL

14:20 – 14:40 – Paper #106

A technology transfer case in graphic engineering.

Authors: OTERO, Cesar; MANCHADO, Cristina; GOMEZ, Valentin.

On-site presentation.

14:40 – 15:00 – Paper #179

Ranged segmentation of slope model for spatial analysis.

Authors: D'AGOSTINO, Pierpaolo; MARTÍNEZ-CHAO, Tomás E.; ANTUONO, Giuseppe; MENÉNDEZ-DÍAZ, Agustín; VINDROLA, Pedro G..
On-site presentation.

15:00 – 15:20 – Paper #157

Digital thread and building lifecycle management for industrialisation of construction operations: a state-of-the-art review.

Authors: BLAMPAIN, Félix; BRICOGNE, Matthieu; EYNARD, Benoît; BRICOGNE, Céline; PINON, Sébastien.
On-site presentation.

15:20 – 15:40 – Paper #204

Traceability of Uncertainty in Building Information Modelling processes for Existing Structures.

Authors: DI FILIPPO, Andrea; GUJSKI, Lucas Matias; CAPPETTI, Nicola; VILLECCO, Francesco.
On-Site presentation.

Session 2 – Track 3: Advanced Manufacturing and control

Hotel Continental – Ischia – Room 3

Wednesday 01/06/2022, 14:20 – 15:40

Chairman: Patrick MARTIN

14:20 – 14:40 – Paper #184

Data processing of L-PBF manufactured lattice structures for geometric defects characterization.

Authors: FERREIRA, Kévin; ANWER, Nabil; MEHDI-SOUZANI, Charyar.
On-site presentation.

14:40 – 15:00 – Paper #170

Mixed Reality Platform supporting Human-Robot Interaction.

Authors: MOZZILLO, Rocco; CALZONE, Nicolas; SILEO, Monica; PIERRI, Francesco; CACCAVALE, Fabrizio.
On-Site presentation.

15:00 – 15:20 – Paper #130

Conformity rate estimation for shaft-hole pattern fit not compliant with the Boundary Condition design criterion.

Authors: MALTAURO, Mattia; MENEGHELLO, Roberto; CONCHERI, Gianmaria.
On-site presentation.

15:20 – 15:40 – Paper #131

A case study on the correlation between functional and manufacturing specifications for a large injection moulded part.

Authors: MALTAURO, Mattia; MENEGHELLO, Roberto; CONCHERI, Gianmaria; PELLEGRINI, Daniele; VIERO, Massimo; BISOGNIN, Giuseppe.
On-Site presentation.

Session 2 – Track 4: X-Reality for Interactive Design

Hotel Continental – Ischia – Room 4

Wednesday 01/06/2022, 14:20 – 15:40

Chairman: Andrea TARALLO

14:20 – 14:40 – Paper #216

Performance evaluation of an immersive measurement instrument for automotive field applications.

Authors: FONTANA, Carlotta; IAQUINANDI, Michele; FIORILLO, Iolanda; NADDEO, Alessandro; CAPPETTI, Nicola.

On-site presentation.

14:40 – 15:00 – Paper #246

Design of XR applications for museums including technology maximising visitors' experience.

Authors: MENGONI, Maura; CARULLI, Marina; GENEROSI, Andrea; BORDEGONI, Monica.

On-Site presentation.

15:00 – 15:20 – Paper #174

An AR tool to Support Warehouse Operations in the Context of Industry 4.0.

Authors: RAFFAELI, Roberto; CASCIOTTA, Edoardo; KHAMAISI, Riccardo Karim; PERUZZINI, Margherita.

On-Line presentation.

15:20 – 15:40 – Paper #222

A Review of Benchmarks for Visual Defect Detection in the Manufacturing Industry.

Authors: CARVALHO, Philippe; DURUPT, Alexandre; GRANDVALET, Yves.

On-site presentation.

Keynote Speaker 1:

Prof. Stephan Odenwald/ Chemnitz University of Technology, Department of Sports Equipment and Technology

Hotel Continental – Ischia – Plenary Room

Wednesday 01/06/2022, 16:00 – 16:45

Keynote Speaker 2:

Dr. Guido Porro/ Managing Director – Southern Europe – Dassault Systèmes

Hotel Continental – Ischia – Plenary Room

Wednesday 01/06/2022, 16:45 – 17:30

Session 3 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 1

Wednesday 01/06/2022, 17:30 – 18:30

Chairman: Nicola CAPPETTI

17:30 – 17:50 – Paper #220

A Topology Optimization Approach to Design of a Low Cost 3D Printable Monolithic Compliant Mechanism for FWMAV's Wing Actuation.

Authors: CAROLLO, Giovanni; INGRASSIA, Tommaso; PANTANO, Antonio; NIGRELLI, Vincenzo; TRIPOLI, Marco Cosimo.

On-site presentation.

17:50 – 18:10 – Paper #118

Analysis of guided waves dispersive behavior for damage detection in flat and curved composite panels.

Authors: DE LUCA, Alessandro; PERFETTO, Donato; LAMANNA, Giuseppe; CAPUTO, Francesco.

On-site presentation.

18:10 – 18:30 – Paper #134

Design of a snap-fit joint through a multibody model.

Authors: PASCOLETTI, Giulia; CONTI, Paolo; BIANCONI, Francesco; ZANETTI, Elisabetta M..

On-site presentation.

Session 3 – Track 2: Geometric Modelling and Analysis

Hotel Continental – Ischia – Room 2

Wednesday 01/06/2022, 17:30 – 18:30

Chairman: Alexandre DURUPT

17:30 – 17:50 – Paper #243

A Digital Twin Approach for Smart Assembly of Aircraft Skin Panels with Mechanical Fasteners.

Authors: GERBINO, Salvatore; FRANCIOSA, Pasquale; STELLA, Ettore; BERRI, Luigi; GRAMEGNA, Nicola; GALLO, Nicola; MARTORELLI, Massimo.

On-site presentation.

17:50 – 18:10 – Paper #234

Interoperability framework for a Computer-Aided approach of tolerance-cost optimization.

Authors: PETRUCCIOLI, Andrea; PINI, Fabio; LEALI, Francesco.

On-Site presentation.

18:10 – 18:30 – Paper #147

Experimental and numerical investigations of mechanical behaviour for titanium bolted joints with friction shim.

Authors: PICHON, Guillaume; DAIDIÉ, Alain; PAROISSIEN, Eric; BENABEN, Audrey; CHIROL, Clément.

On-site presentation.

Session 3 – Track 3: Advanced Manufacturing and control

Hotel Continental – Ischia – Room 3

Wednesday 01/06/2022, 17:30 – 18:30

Chairman: Manuel PAREDES

17:30 – 17:50 – Paper #144

Correlations between the surface integrity and the residual fatigue strength for drilled 2024-T351 aluminum alloy.

Authors: LANDON, Yann; LACOMBE, Alexandra; KAMGAING SOUOP, Landry Arnaud; DAIDIÉ, Alain; PAREDES, Manuel; BENABEN, Audrey; CHIROL, Clément.

On-site presentation.

17:50 – 18:10 – Paper #135

An empirical approach for mechanical behavior characterization of a small diameter cold-drawn steel wire with a three-point bending test.

Authors: VAÏSSETTE, Julien; PAREDES, Manuel; MABRU, Catherine.

On-site presentation.

18:10 – 18:30 – Paper #208

Geometrical Tolerances: “Planarity” Measurements on Automotive Power Module during its Assembly Processes-Flow.

Authors: CALABRETTA, Michele; SITTA, Alessandro; MESSINA, Angelo Alberto; OLIVERI, Salvatore Massimo; SEQUENZIA, Gaetano.
On-site presentation.

Session 4 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 4

Wednesday 01/06/2022, 17:30 – 18:30

Chairman: Luca DI ANGELO

17:30 – 17:50 – Paper #185

Skeleton and medial axis functions evaluation of voxel discretized geometries.

Authors: FONTANA, Carlotta; CAPPETTI, Nicola; PIERRI, Silvia.
On-Site presentation.

17:50 – 18:10 – Paper #182

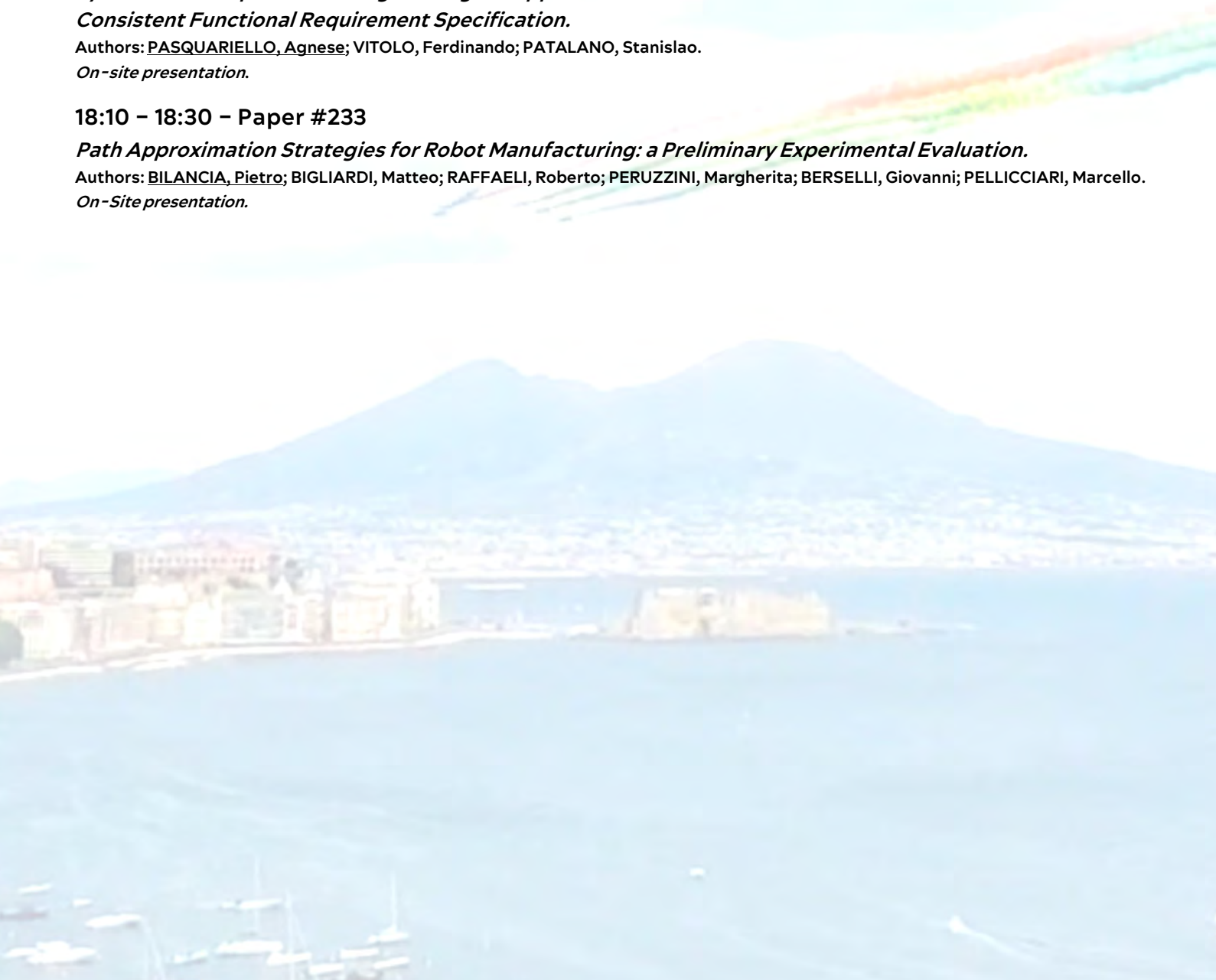
Systems and Requirements Engineering: an Approach and a Software Tool for the Interactive and Consistent Functional Requirement Specification.

Authors: PASQUARIELLO, Agnese; VITOLO, Ferdinando; PATALANO, Stanislao.
On-site presentation.

18:10 – 18:30 – Paper #233

Path Approximation Strategies for Robot Manufacturing: a Preliminary Experimental Evaluation.

Authors: BILANCIA, Pietro; BIGLIARDI, Matteo; RAFFAELI, Roberto; PERUZZINI, Margherita; BERSELLI, Giovanni; PELLICCIARI, Marcello.
On-Site presentation.



Session 5 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 1

Thursday 02/06/2022, 9:00 – 10:20

Chairman: Vincent CHEUTET

9:00 – 9:20 – Paper #213

A design method for custom functionally graded lattice orthoses.

Authors: UCCHEDDU, Francesca; SPONCHIADO, Riccardo; SAVIO, Gianpaolo; GRIGOLATO, Luca; DAL FABBRO, Pierandrea.

On-site presentation.

9:20 – 9:40 – Paper #226

Automatic segmentation of stomach of patients affected by obesity.

Authors: PRETTO, Andrea; TONIOLO, Ilaria; BERARDO, Alice; SAVIO, Gianpaolo; PERRETTA, Silvana; CARNIEL, Emanuele Luigi; UCCHEDDU, Francesca.

On-site presentation.

9:40 – 10:00 – Paper #180

Modeling of Cutting Operations for Robotic Surgery using CAE Tools.

Authors: PITZALIS, Roberto Francesco; BERSELLI, Giovanni; PETTINATO, Stefano; ORTIZ, Jesùs.

On-site presentation.

10:00 – 10:20 – Paper #110

Mixed reality-based support for Total Hip Arthroplasty assessment.

Authors: TORNINCASA, Stefano; ULRICH, Luca; INNOCENTE, Chiara; PIAZZOLLA, Pietro; MOOS, Sandro; VEZZETTI, Enrico.

On-site presentation.

Session 4 – Track 2: Geometric Modelling and Analysis

Hotel Continental – Ischia – Room 2

Thursday 02/06/2022, 9:00 – 10:20

Chairman: Armando V. RAZIONALE

9:00 – 9:20 – Paper #104

A benchmark of traditional visual descriptors and convolutional networks 'off-the-shelf' for anomaly detection.

Authors: BIANCONI, Francesco; CONTI, Paolo; ZANETTI, Elisabetta Maria; PASCOLETTI, Giulia.

On-site presentation.

9:20 – 9:40 – Paper #150

Melt pool acquisition using near-infrared camera in aluminum Wire Arc Additive Manufacturing.

Authors: DELLARRE, Anthony; LIMOUSIN, Maxime; BERAUD, Nicolas.

On-site presentation.

9:40 – 10:00 – Paper #186

Image-driven manufacturing of graded lattices by fused deposition modeling.

Authors: GRIGOLATO, Luca; ROSSO, Stefano; BERNARDO, Enrico; CONCHERI, Gianmaria; SAVIO, Gianpaolo.

On-site presentation.

10:00 – 10:20 – Paper #187

Geometric modeling of lattice structures with selectively activated walls for hydraulic manifolds.

Authors: ROSSO, Stefano; GRIGOLATO, Luca; CONCHERI, Gianmaria; SAVIO, Gianpaolo.

On-site presentation.

Session 4 – Track 3: Advanced Manufacturing and control

Hotel Continental – Ischia – Room 3

Thursday 02/06/2022, 9:00 – 10:20

Chairman: François VILLENEUVE

9:00 – 9:20 – Paper #191

Experiences of Additive Manufacturing for nuclear fusion applications: the case of the wishbone of the divertor of DEMO project.

Authors: MOTYL, Barbara; MARZULLO, Domenico; VAGLIO, Emanuele; FILIPPI, Stefano; SCALZO, Federico; TOTIS, Giovanni; SORTINO, Marco; IMBRIANI, Vito; MAZZONE, Giuseppe; YOU, Jeong-Ha.

On-Site presentation.

9:20 – 9:40 – Paper #206

Embedded Workflow for Functionally Graded Material Fabrication with Multi-Material Additive Manufacturing.

Authors: ROSSONI, Marco; PIGAZZI, Riccardo; COLOMBO, Giorgio.

On-site presentation.

9:40 – 10:00 – Paper #154

Lattice core FEM simulation with a modified-beam approach.

Authors: TUMINO, Davide; ALAIMO, Andrea; ORLANDO, Calogero; VALVANO, Stefano; VINDIGNI, Carmelo Rosario.

On-site presentation.

10:00 – 10:20 – Paper #238

Eco-assessment of Design for Additive Manufacturing solutions defined at different levels of detail.

Authors: COLOMBO ZEFINETTI, Filippo; SPREAFICO, Christian; REGAZZONI, Daniele; LANDI, Daniele.

On-site presentation.

Session 3 – Track 4: X-Reality for Interactive Design

Hotel Continental – Ischia – Room 4

Thursday 02/06/2022, 9:00 – 10:20

Chairman: Antonello UVA

9:00 – 9:20 – Paper #136

Role-based Sailing Augmented Reality Interface: Three Proposal for Head Mounted Display.

Authors: LAERA, Francesco; EVANGELISTA, Alessandro; MANGHISI, Vito Modesto; FOGLIA, Mario Massimo; FIORENTINO, Michele.

On-site presentation.

9:20 – 9:40 – Paper #160

X-Reality for preliminary evaluation and training of 3D laser scanning process of large products.

Authors: GRECO, Alessandro; CARDILICCHIO, Antimo; GERBINO, Salvatore.

On-site presentation.

9:40 – 10:00 – Paper #173

From Virtual to Augmented Reality Training System: An IC.IDO-Based Approach.

Authors: BUONOCORE, Sara; GIOVANNOLI, Pietro; DI GIRONIMO, Giuseppe.

On-site presentation.

10:00 – 10:20 – Paper #241

Development Of A Parametric Scene Editor Of Serious Games For Safety In Workplaces.

Authors: PAPA, Stefano; RENNO, Fabrizio; POLICHETTI, Rosario; COCCORESE, Domenico; D'ANGELO, Raffaele; GRASSO, Corrado; TARALLO, Andrea; LANZOTTI, Antonio.

On-Site presentation.

Keynote Speaker 3:

Prof. Vincent Cheutet/University Lyon

Hotel Continental – Ischia – Plenary Room

Thursday 02/06/2022, 11:00 – 12:00

Session 6 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 1

Thursday 02/06/2022, 12:00 – 13:20

Chairman: Antonio MANCUSO

12:00 – 12:20 – Paper #239

Optimal design of surface functionally graded dental implants with improved properties.

Authors: MARTORELLI, Massimo; AUSIELLO, Pietro; PAPALLO, Ida; GLORIA, Antonio; MONTANARI, Roberto; RICETTA, Maria; LANZOTTI, Antonio.

On-site presentation.

12:20 – 12:40 – Paper #229

Automatic Outcomes in Minnesota Dexterity Test Using a System of Multiple Depth Cameras.

Authors: CAPORASO, Teodorico; SANSEVERINO, Giuseppe; KRUMM, Dominik; GRAZIOSO, Stanislao; DI GIRONIMO, Giuseppe; D'ANGELO, Raffaele; ODENWALD, Stephan; LANZOTTI, Antonio.

On-site presentation.

12:40 – 13:00 – Paper #167

An engineering method to evaluate care processes and introduce televisits.

Authors: SAVOLDELLI, Anna; REGAZZONI, Daniele; LUDI, Simona; RIZZI, Caterina.

On-Site presentation.

13:00 – 13:20 – Paper #201

A 3D Modeling Approach to Realize and Test Customized Knee Implants.

Authors: GHIDOTTI, Anna; LANDI, Daniele; REGAZZONI, Daniele; RIZZI, Caterina.

On-site presentation.

Session 7 – Track 1: Design Methods and Tools

Hotel Continental - Ischia - Room 2

Thursday 02/06/2022, 12:00 - 13:20

Chairman: Julien LE DUIGOU

12:00 – 12:20 – Paper #181

Critical analysis on the limitations of the diffusion of Life Cycle Assessment.

Authors: SPREAFICO, Christian; RUSSO, Davide; LANDI, Daniele.

On-site presentation.

12:20 – 12:40 – Paper #112

A Computer-Aided Tool for the Energy Optimization of Industrial Robots in Manufacturing Applications.

Authors: MERLO, Fabio; BERSELLI, Giovanni; VAZZOLER, Greta.

On-site presentation.

12:40 – 13:00 – Paper #119

Implementing Vocal Natural Language Interface to Enterprise Resource Planning System.

Authors: LE DUIGOU, Julien; ZHANG, Shengzhe.

On-site presentation.

13:00 – 13:20 – Paper #120

Collective intelligence application in a kitting picking zone of the automotive industry.

Authors: MONTOYA ZAPATA, Santiago; KLEMENT, Nathalie; SILVA, Cristovao; GIBARU, Olivier; LAFOU, Meriem.

On-site presentation.

Session 5 – Track 3: Advanced Manufacturing and control

Hotel Continental - Ischia - Room 3

Thursday 02/06/2022, 12:00 - 13:20

Chairman: Giorgio COLOMBO

12:00 – 12:20 – Paper #188

Mereo-DfAM: a methodological proposal of mereotopo-logical design for additive manufacturing.

Authors: KROMER, Robin; DOUIN, Chloé; GRUHIER, Elise.

On-site presentation.

12:20 – 12:40 – Paper #168

Design for additive manufacturing tools: Are they an effective support for designers?.

Authors: MARCONI, Marco; ZANINI, Alessio; FAVI, Claudio; MANDOLINI, Marco.

On-site presentation.

12:40 – 13:00 – Paper #176

An analytical cost model for Laser-Directed Energy Deposition (L-DED).

Authors: MANDOLINI, Marco; SARTINI, Mikhailo; FAVI, Claudio; GERMANI, Michele.

On-site presentation.

13:00 – 13:20 – Paper #162

A design methodology for graded density triply periodic minimal surfaces.

Authors: RAMÍREZ, Emilio A.; BÉRAUD, Nicolas; POURROY, Franck; VILLENEUVE, François; MUSEAU, Matthieu.

On-site presentation.

Session 8 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 4

Thursday 02/06/2022, 12:00 – 13:20

Chairman: Francesco LEALI

12:00 – 12:20 – Paper #190

Surface Grinding of Borosilicate Crown Glass Optics via a Robotic Approach Based on Superposed Trajectories.

Authors: PINI, Fabio; TAMASSIA, Eugenio; GRUNWALD, Tim; BERGS, Thomas; LEALI, Francesco.

On-site presentation.

12:20 – 12:40 – Paper #117

Interpreting emotions with EEG: an experimental study with chromatic variation in VR.

Authors: CASTIBLANCO JIMENEZ, Ivonne Angelica; MARCOLIN, Federica; ULRICH, Luca; MOOS, Sandro; VEZZETTI, Enrico; TORNINCASA, Stefano.

On-site presentation.

12:40 – 13:00 – Paper #225

Design requirements assessment in the COMMAND (COmpact Multi-purpose Muon and Neutron Detector) project.

Authors: PADERNO, Diego; BODINI, Ileana; PAGANO, Davide; DONZELLA, Antonietta; BONOMI, Germano; ZENONI, Aldo; CANTONE, Andrea; VILLA, Valerio.

On-site presentation.

13:00 – 13:20 – Paper #217

Requirements Management in Master Model development: a case study in Fusion Engineering.

Authors: LANZOTTI, Francesca Giovanna; MARZULLO, Domenico; IMBRIANI, Vito; MAZZONE, Giuseppe; YOU, Jeong-Ha; DI GIRONIMO, Giuseppe.

On-Site presentation.

Session 1 – Track SR: Design for Soft Robotics

Hotel Continental – Ischia – Room 1

Thursday 02/06/2022, 14:20 – 15:40

Chairman: Stanislao GRAZIOSO

14:20 – 14:40 – Paper #194

Design of a fabric-based antagonistic pneumatic actuator with multiple chambers for the development of soft continuum manipulators.

Authors: GRAZIOSO, Stanislao; CAPORASO, Teodorico; OSTUNI, Benedetta Maria Vita; DI GIRONIMO, Giuseppe; LANZOTTI, Antonio.

On-site presentation.

14:40 – 15:00 – Paper #209

Design, fabrication and characterization of a novel variable stiffness structure for soft continuum robotics.

Authors: WOCKENFUß, Wilhelm Richard; WEISHEIT, Linda.

On-site presentation.

15:00 – 15:20 – Paper #228

Effects of Design Parameters on the Tip Steering Capabilities of Fabric Pneumatic Artificial Muscle-actuated Soft Growing Robots.

Authors: SELVAGGIO, Mario; GRAZIOSO, Stanislao; FUSCO, Salvatore; SABELLA, Roberto; Fontanelli, Giuseppe Andrea; DI GIRONIMO, Giuseppe; SICILIANO, Bruno; LANZOTTI, Antonio.

On-site presentation.

Session 6 – Track 3: Advanced Manufacturing and control

Hotel Continental - Ischia - Room 3

Thursday 02/06/2022, 14:20 - 15:40

Chairman: Lionel ROUCOULES

14:20 – 14:40 – Paper #232

Simulation-based design of reconfigurable moulds for injection overmoulding.

Authors: GHERARDINI, Francesco; GALATI, Nicolò; GUAITOLI, Caterina; VERGNANO, Alberto.

On-site presentation.

14:40 – 15:00 – Paper #223

Toolpath calculation using reinforcement learning in Machining.

Authors: VIGNAT, Frederic; TEZENAS DU MONTCEL, Thibaut; BERAUD, Nicolas.

On-Site presentation.

15:00 – 15:20 – Paper #236

Markerless motion capture and virtual reality for real-time ergonomic analysis of operators in workstations with collaborative robots: a preliminary study.

Authors: LANZONI, Daniel; CATTANEO, Andrea; VITALI, Andrea; REGAZZONI, Daniele; RIZZI, Caterina.

On-site presentation.

15:20 – 15:40 – Paper #198

Analysis of data from in-situ monitoring of Additive manufacturing process.

Authors: COMBERTON, David; KROMER, Robin; LACOSTE, Eric.

On-Site presentation.

Session 9 – Track 1: Design Methods and Tools

Hotel Continental - Ischia - Room 4

Thursday 02/06/2022, 14:20 - 15:40

Chairman: Francesco BIANCONI

14:20 – 14:40 – Paper #141

Towards real-time physics-based variation simulation of assembly systems with compliant sheet-metal parts based on reduced-order models.

Authors: RUSSO, Mario Brandon; GRECO, Alessandro; GERBINO, Salvatore; FRANCIOSA, Pasquale.

On-site presentation.

14:40 – 15:00 – Paper #166

Simulation methods for plant layout design-A case study.

Authors: CATERINO, Mario; RINALDI, Marta; TURINO, Maria Antonietta; FERA, Marcello; HARTONO, Natalia.

On-Site presentation.

15:00 – 15:20 – Paper #196

Energy efficient trajectory planning in robotic cells via virtual prototyping tools.

Authors: RAZZOLI, Roberto; BAGGETTA, Mario; BERSELLI, Giovanni; ZUCCHINETTI, Marta.

On-site presentation.

15:20 – 15:40 – Paper #178

Preliminary Validation of a Virtual Environment for Simulation and Recognition of Human Gestures.

Authors: SANSEVERINO, Giuseppe; KRUMM, Dominik; KOPNARSKI, Lena; RUDISCH, Julian; VOELCKER-REHAGE, Claudia; ODENWALD, Stephan.

On-site presentation.

Session 2 – Track SR: Design for Soft Robotics

Hotel Continental – Ischia – Room 1

Thursday 02/06/2022, 16:00 – 17:00

Chairman: Malte HEINRICH

16:00 – 16:20 – Paper #230

A user-centered approach involving the clinicians for the design of medical devices: case study of a soft robotic glove for rehabilitation.

Authors: OSTUNI, Benedetta M. V.; CAPORASO, Teodorico; GRAZIOSO, Stanislao; PALOMBA, Angela; DI GIRONIMO, Giuseppe; IOLASCON, Giovanni; LANZOTTI, Antonio.

On-site presentation.

16:20 – 16:40 – Paper #231

Preliminary design of a EMG wearable interface for the actuation of soft pneumatic artificial muscles.

Authors: CAPORASO, Teodorico; GRAZIOSO, Stanislao; OSTUNI, Benedetta M.V.; LANZOTTI, Antonio.

On-site presentation.

16:40 – 17:00 – Paper #240

Preliminary Study of a Capacitive Force Sensor for Soft Robotic Applications.

Authors: BELLITTI, Paolo; CAPORASO, Teodorico; GRAZIOSO, Stanislao; LANZOTTI, Antonio; SARDINI, Emilio; SERPELLONI, Mauro.

On-site presentation.

Session 5 – Track 2: Geometric Modelling and Analysis

Hotel Continental – Ischia – Room 2

Thursday 02/06/2022, 16:00 – 17:00

Chairman: Agustín MENÉNDEZ-DÍAZ

16:00 – 16:20 – Paper #211

Reverse engineering and redesign of the impeller of a submersible centrifugal pump.

Authors: RICOTTA, Vito; MARANNANO, Giuseppe; NIGRELLI, Vincenzo; PIRRI, Riccardo.

On-site presentation.

16:20 – 16:40 – Paper #249

Convolutional Neural Network for Background Removal in Close Range Photogrammetry: Application on Cultural Heritage Artefacts.

Authors: BICI, Michele; GHERARDINI, Francesco; GUACHI-GUACHI, Lorena de Los Angeles; GUACHI, Robinson; CAMPANA, Francesca.

On-Site presentation.

16:40 – 17:00 – Paper #199

Characterization of deviations induced by the computer numerical control strategy in additive manufacturing process.

Authors: KROMER, Robin; FOUQUET, Florian; MORELIERE, David; LACOSTE, Eric.

On-site presentation.

Session 10 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 3

Thursday 02/06/2022, 16:00 – 17:00

Chairman: Daniele REGAZZONI

16:00 – 16:20 – Paper #227

Computer-Aided Prognostics and Health Management using Incipient Failure Detection.

Authors: BERSELLI, Giovanni; OTTONELLO, Elia; GATTINO, Cecilia; BAGGETTA, Mario; STECKI, Jacek.

On-Site presentation.

16:20 – 16:40 – Paper #214

Design and implementation of a passive agitator to increase UV dose in WWTPs disinfection channels.

Authors: TRIFI, Delia; CLIMENT, Javier; ARNAU, Rosario; CARRATALÀ, Pablo; GARCÍA, Mairena; BELTRÁN, Inés; BADENES, Cristobal; CHIVA, Sergio; MARTÍNEZ-CUENCA, Raúl.

On-site presentation.

16:40 – 17:00 – Paper #146

Design and comparison of high performance sailing hulls.

Authors: MANCUSO, Antonio; SAPORITO, Antonio; TUMINO, Davide.

On-Site presentation.

Session 4 – Track 4: X-Reality for Interactive Design

Hotel Continental – Ischia – Room 4

Thursday 02/06/2022, 16:00 – 17:00

Chairman: Tommaso INGRASSIA

16:00 – 16:20 – Paper #212

A human-centred design approach for designing augmented reality enabled interactive systems: a kitchen machine case study.

Authors: RICCI, Marina; SCARCELLI, Alessandra; D'INTRONO, Annarita; STRIPPOLI, Valeria; CARIATI, Simona; FIORENTINO, Michele.

On-site presentation.

16:20 – 16:40 – Paper #219

Virtual Golden Zone for Enhancing the Ergonomics of Complex Production Lines.

Authors: DAMMACCO, Lucilla; CARLI, Raffaele; GATTULLO, Michele; LAZAZZERA, Vito; FIORENTINO, Michele; DOTOLI, Mariagrazia.

On-site presentation.

16:40 – 17:00 – Paper #148

Displaying Augmented Reality manuals in the design phase of the product lifecycle.

Authors: LAVIOLA, Enrico; GATTULLO, Michele; EVANGELISTA, Alessandro.

On-site presentation.

ADM Meeting

Hotel Continental – Ischia – Plenary Room

Thursday 02/06/2022, 17:00 – 19:00

Session 11 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 1

Friday 03/06/2022, 9:00 – 10:20

Chairman: Marcello PELLICCIARI

9:00 – 9:20 – Paper #124

Analysis of the Tensioning Field Induced by Stress Fibers in Nanoindented Stem Cells Adhered to a Flat Substrate.

Authors: VAIANI, Lorenzo; UVA, Antonio Emmanuele; BOCCACCIO, Antonio.

On-site presentation.

9:20 – 9:40 – Paper #153

Real-Time Approximative Thermal Simulation for Wire Arc Additive Manufacturing.

Authors: TEZENAS DU MONTCEL, Thibaut; BERAUD, Nicolas; VIGNAT, Frédéric; POURROY, Franck; MARIN, Philippe; PAILHES, Jérôme.

On-site presentation.

9:40 – 10:00 – Paper #129

Framework for the dynamic modeling of a helicopter planetary gear train with gear or bearing defect.

Authors: MIGNOT-PASTY, Raphaël; ROUCOULES, Lionel; MALBURET, François; HONNORAT, Olivier.

On-site presentation.

10:00 – 10:20 – Paper #161

Towards a digital factory in the leather goods sector: the case of an Italian company.

Authors: PIETRONI, Giorgia; MARCONI, Marco.

On-site presentation.

Session 12 – Track 1: Design Methods and Tools

Hotel Continental – Ischia – Room 2

Friday 03/06/2022, 9:00 – 10:20

Chairman: Francesca CAMPANA

9:00 – 9:20 – Paper #192

A medical device for correctly positioning custom-made implants for fractured orbital cavities.

Authors: CARAGIULI, Manila; MANDOLINI, Marco; BRUNZINI, Agnese; MAZZOLI, Alida; PAGNONI, Mario.

On-site presentation.

9:20 – 9:40 – Paper #125

A semiautomatic procedure to assist physicians in paediatric airway stenting.

Authors: SANTARELLI, Chiara; PUGGELLI, Luca; VOLPE, Yary; SERIO, Paola; FURFERI, Rocco.

On-site presentation.

9:40 – 10:00 – Paper #108

Can MaWR-method for symmetry plane detection be generalized for complex panfacial fractures?.

Authors: MARZOLA, Antonio; DI ANGELO, Luca; DI STEFANO, Paolo; GOVERNI, Lapo; VOLPE, Yary.

On-site presentation.

10:00 – 10:20 – Paper #244

The morphological and geometrical segmentation of human thoracic and lumbar vertebrae: an automatic computer-based method.

Authors: GUARDIANI, Emanuele; DI ANGELO, Luca; DI STEFANO, Paolo.

On-site presentation.

Hotel Continental – Ischia – Room 3

Friday 03/06/2022, 9:00 – 10:20

Chairman: Domenico MARZULLO

Session 7 – Track 3: Advanced Manufacturing and control

9:00 – 9:20 – Paper #221

InvNet: transfer learning on point cloud for invariant surface classification.

Authors: QIE, Yifan; ANWER, Nabil.

On-site presentation.

9:20 – 9:40 – Paper #137

Effects of coating post-processing on mechanical properties of strut-and-node-based SLA lattice structures.

Authors: TAMBURRINO, Francesco; NERI, Paolo; PAOLI, Alessandro; RAZIONALE, Armando V..

On-site presentation.

Session 5 – Track 4: X-Reality for Interactive Design

9:40 – 10:00 – Paper #149

From Therbligs to Visual Assets: a technique to convey Work Instructions in Augmented Reality Technical Documentation.

Authors: GATTULLO, Michele; LAVIOLA, Enricoandrea; UVA, Antonio Emmanuele.

On-site presentation.

10:00 – 10:20 – Paper #156

Immersive Virtual Reality as a training tool for Safety Working Procedure in Confined Spaces.

Authors: MANGHISI, Vito Modesto; EVANGELISTA, Alessandro; ROSSANO, Veronica; GILIBERTI, Claudia; MARICONTE, Raffaele; DIANO, Maurizio; GALASSO, Valerio; UVA, Antonio Emmanuele.

On-site presentation.

Session 1 – Track 5: Education and Representation Techniques

Hotel Continental – Ischia – Room 4

Friday 03/06/2022, 9:00 – 10:20

Chairman: Gianmaria CONCHERI

9:00 – 9:20 – Paper #111

Soft Skills Teaching Proposal for “Designer”.

Authors: ROVIDA, Edoardo; GIANOTTI, Alberta; ZAFFERRI, Giulio.

On-site presentation.

9:20 – 9:40 – Paper #200

Project and problem based learning for students and teachers involvement in a multidisciplinary engineering project.

Authors: PÉDARRIOSSE, Camille; ROUCOULES, Lionel; HUET, Florian; YAHIA, Esma; POLETTE, Arnaud; KLEINER, Mathias.
On-site presentation.

9:40 – 10:00 – Paper #158

A new approach to teach conceptual de-sign integrating additive manufacturing constraints.

Authors: KROMER, Robin; GRUHIER, Elise.
On-site presentation.

10:00 – 10:20 – Paper #202

Methodology for online assessment of Technical Drawing skills of industrial engineering students.

Authors: BODINI, Ileana; PADERNO, Diego; UBERTI, Stefano; VILLA, Valerio; BARONIO, Gabriele.
On-site presentation.

Third Mission Experience Talk:

Ferrero Team/Kinder +Sport Ferrero

Hotel Continental - Ischia - Plenary Room

Friday 03/06/2022, 10:20 - 11:10

Keynote Speaker 4:

Prof. Valen Gómez Jáuregui/ Universidad de Cantabria - Dpto. Ing. Geográfica y Técnicas de Expresión Gráfica - ETS Ing. Industriales y Telecomunicaciones

Hotel Continental - Ischia - Plenary Room

Friday 03/06/2022, 11:30 - 12:15

POSTER Session

Hotel Continental - Ischia - Open Space

Friday 03/06/2022, 12:15 - 13:30

Paper #121: *Design and development of an IoT enabled device for remote monitoring of hydraulic hammers*

Authors: HEIDARPOUR, Farhad; CICCOLELLA, Alessandro; UVA, Antonio Emmanuele.

Paper #143: *Optimizing galvanic process: wet surface estimation for small metal parts to avoid material waste*

Authors: PUGGELLI, Luca; CARFAGNI, Monica; FURFERI, Rocco; GOVERNI, Lapo.

Paper #151: *Towards a Knowledge-Based Additive Manufacturing Approach*

Authors: GRANDVALLET, Christelle; POURROY, Franck; VIGNAT, Frédéric.

Paper #159: *Tintoretto Unveiled: Interactive Virtual Experience for Artworks*

Authors: ARUANNO, Beatrice; BARONE, Sandro; TAMBURRINO, Francesco; COVARRUBIAS, Mario.

Paper #165: *Workstation design centered to workers 'safe use*

Authors: GODOT, Xavier; MARTIN, Patrick; DAILLE-LEFEVRE, Bruno; PETRONIJEVIC, Jelena.

Paper #169: *Design and creation of an economical camera slider for photography*

Authors: TRIVIÑO-TARRADAS, Paula; MEDINA-TRIVIÑO, Pedro; ORTIZ-CORDERO, Rafael; GONZALEZ-REDONDO, Miguel.

Paper #177: *Design and Manufacture of a Sustainable Recycled Plastic Shredder*

Authors: TEJERO-OLALLA, José M.; MACÍAS-GARCÍA, José; LADRÓN-DE-GUEVARA-MUÑOZ, M. Carmen; DE-CÓZAR-MACÍAS, Óscar D.; CASTILLO-RUEDA, Francisca J.; MARÍN-GRANADOS, Manuel D..

Paper #183: *Digital continuity based on reinforcement learning model transformations*

Authors: BRILHAULT, Quentin; YAHIA, Esma; ROUCOULES, Lionel.

Paper #197: *Heat on sight - display thermal radiation in the peripheral field of view*

Authors: PÜSCHEL, Aline; KILIAN, Wolfgang; ODENWALD, Stephan.

Paper #203: *A novel approach to use marker-less mixed reality applications with in-motion systems*

Authors: BRUNZINI, Agnese; CICCARELLI, Marianna; SARTINI, Mikhailo; MENCHI, Giacomo; PAPETTI, Alessandra; GERMANI, Michele.

Session 13 – Track 1: Design Methods and Tools

Hotel Continental - Ischia - Room 1

Friday 03/06/2022, 14:40 - 16:00

Chairman: Alessandro CERUTI

14:40 – 15:00 – Paper #245

Virtual Design for Repair: the case of a gearmotor.

Authors: FRANCIA, Daniela; BOVE, Davide; SANTI, Gian Maria; FERRETTI, Patrich; DONNICI, Giampiero; FRIZZIERO, Leonardo; LIVERANI, Alfredo.

On-site presentation.

15:00 – 15:20 – Paper #210

Implementation of a Sustainable Washing System applied to Plastic Waste Recycling.

Authors: LADRÓN-DE-GUEVARA-MUÑOZ, M. Carmen; MILLÁN-ESTEPA, Álvaro; DíEZ-MARTÍNEZ, Elena; DE-CÓZAR-MACÍAS, Óscar D.; BLÁZQUEZ-PARRA, E. Beatriz; LADRÓN-DE-GUEVARA-LÓPEZ, Isidro.

On-line presentation.

15:20 – 15:40 – Paper #127

Evaluation Method of Modular Products for the Prosumer. Proposal and Improvement.

Authors: ASIÓN-SUÑER, Laura; LÓPEZ-FORNIÉS, Ignacio.

On-line presentation.

15:40 – 16:00 – Paper #128

Experimenting with the Design Thinking methodology in citizen participation contexts.

Authors: MELGAREJO-TORRALBA, Mar; PARRAS-BURGOS, Dolores; LÓPEZ-SALMERÓN, Emilio; CAÑAVATE, Francisco J.F.; FERNÁNDEZ-PACHECO, Daniel G..

On-line presentation.

Session 14 – Track 1: Design Methods and Tools

Hotel Continental - Ischia - Room 2

Friday 03/06/2022, 14:40 - 15:40

Chairman: Antonio GLORIA

14:40 – 15:00 – Paper #152

Circular strategies to improve ephemeral products sustainability through co-creation and its metrics.

Authors: LÓPEZ-FORNIÉS, Ignacio; AGUERRI GALINDO, Álvaro; SIERRA-PÉREZ, Jorge.

On-line presentation.

15:00 – 15:20 – Paper #116

Experimentation and characterization of mycelium-based bio-composites for ephemeral product applications.

Authors: LÓPEZ-FORNIÉS, Ignacio; AURENSANZ MALLADA, Rosa; EJARQUE ORTIZ, Aroa; MADRE SEDILES, Maria A..
On-line presentation.

15:20 – 15:40 – Paper #189

User-centered design for manufacturing and assembly: an application in the early design stages.

Authors: RENZI, Cristina; LEALI, Francesco.
On-line presentation.

15:40 – 16:00 – Paper #205

A Design-Based Thinking for Alarm Use and Management in the Neonatal Intensive Care Unit.

Authors: SANZ SEGURA, Rosana; MANCHADO Pérez, Eduardo; GARCÍA DE PAREDES DE LA VIÑA, Ignacio.
On-line presentation.

Hotel Continental – Ischia – Room 3

Friday 03/06/2022, 14:40 – 16:00

Chairman: Pedro COMPANY

Session 6 – Track 2: Geometric Modelling and Analysis

14:40 – 15:00 – Paper #123

Semi-automatic point clouds registration for upper limb anatomy.

Authors: NERI, Paolo; ARUANNO, Beatrice; BARONE, Sandro; PAOLI, Alessandro; RAZIONALE, Armando Viviano.
On-line presentation.

15:00 – 15:20 – Paper #195

Methodology for image analysis in airborne search and rescue operations.

Authors: CICCONE, Francesco; BACCIAGLIA, Antonio; CERUTI, Alessandro.
On-line presentation.

Session 8 – Track 3: Advanced Manufacturing and control

15:20 – 15:40 – Paper #113

Study of the Anisotropy of Triple Periodic Minimal Surface Structures Generated by Additive Manufacturing.

Authors: MIRALBES, Ramon; SANTAMARIA, Natalia; RANZ, David; GOMEZ, Jose Antonio.
On-line presentation.

15:40 – 16:00 – Paper #193

Topology optimization for thin-walled structures with distributed loads.

Authors: BACCIAGLIA, Antonio; CERUTI, Alessandro; CICCONE, Francesco; LIVERANI, Alfredo.
On-line presentation.

Hotel Continental - Ischia - Room 4

Friday 03/06/2022, 14:40 - 15:40

Chairman: Valerio VILLA

Session 2 – Track 5: Education and Representation Techniques

14:40 – 15:00 – Paper #107

Formative Assessment in Context of COVID-19 Pandemic.

Authors: SERRANO, Ana; BIEDERMANN, Anna; SANTOLAYA, José Luis; MUÑOZ, Natalia; PLAZA, Inmaculada.

On-line presentation.

15:00 – 15:20 – Paper #139

Think-Sketch-Create: improving creative expression through sketching.

Authors: CALAVIA, M. Belén; BLANCO, Teresa; SERRANO, Ana; BIEDERMANN, Anna; CASAS, Roberto.

On-line presentation.

15:20 – 15:40 – Paper #115

Techniques for the representation of the application of historical-archaeological evidence scales in heritage assets.

Authors: TRIVIÑO-TARRADAS, Paula; CÁCERES-CRIADO, Irene; GARCÍA-MOLINA, Diego Francisco; HIDALGO-FERNÁNDEZ, Rafael Enrique.

On-line presentation.

Session 6 – Track 4: X-Reality for Interactive Design

15:40 – 16:00 – Paper #114

Apprentices' opportunities and criticalities in adopting affordable user interface development tools.

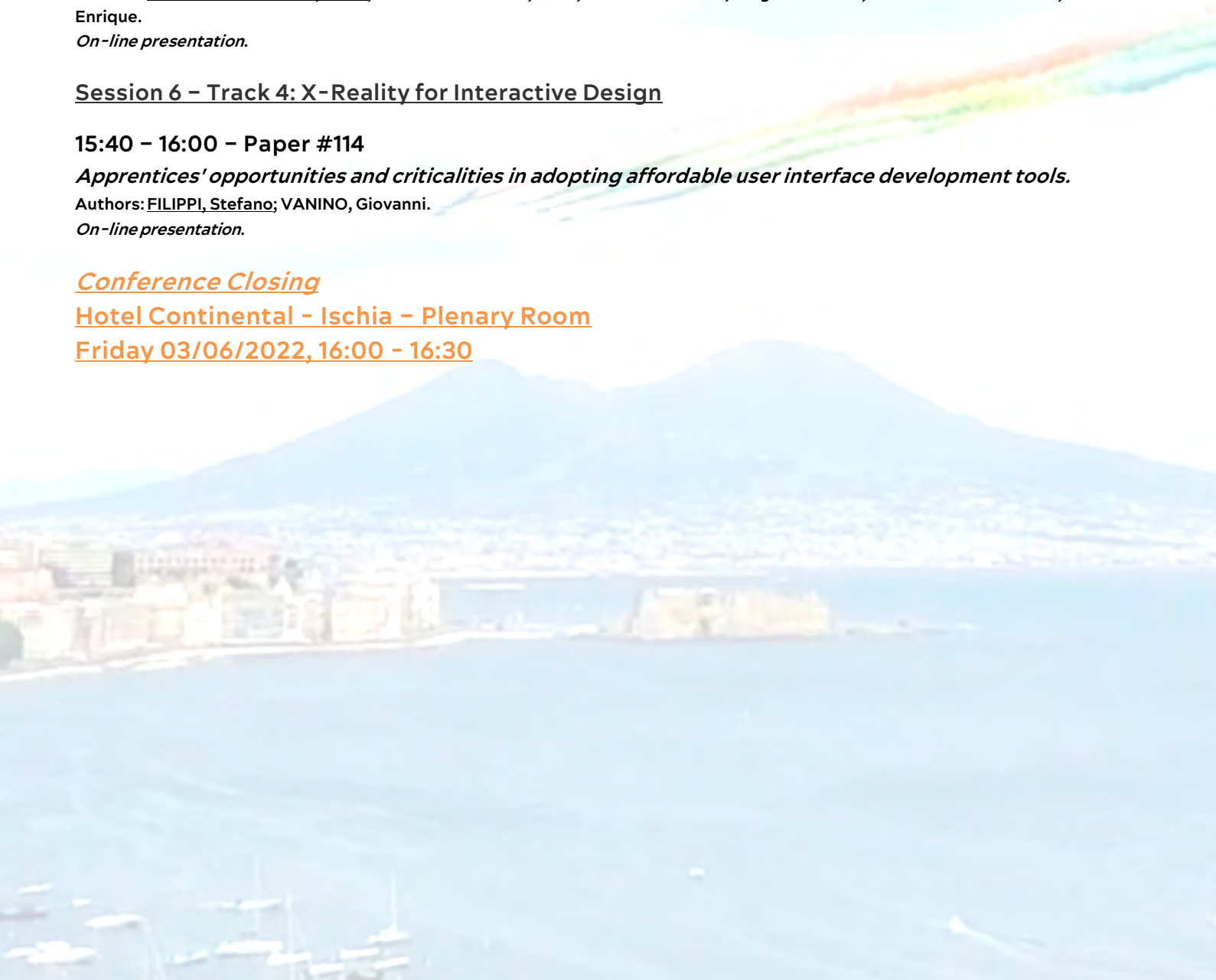
Authors: FILIPPI, Stefano; VANINO, Giovanni.

On-line presentation.

Conference Closing

Hotel Continental - Ischia - Plenary Room

Friday 03/06/2022, 16:00 - 16:30



LOCATION

Ischia Italy

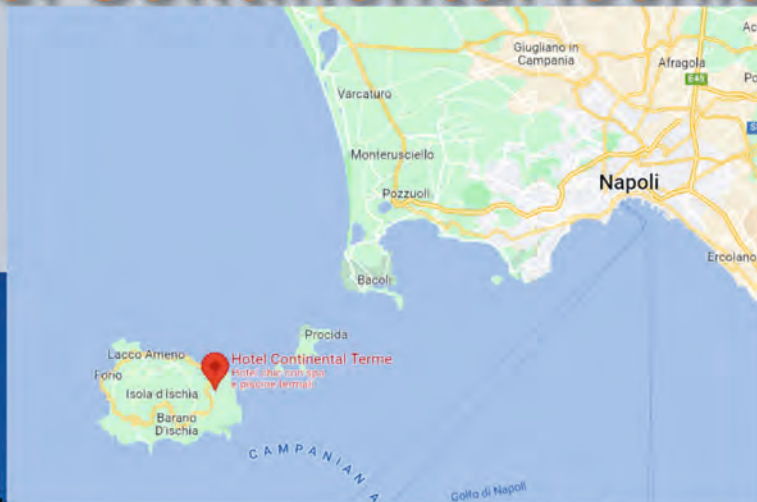
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VENUE

Hotel Continental Ischia





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Gala Dinner
Thursday 2nd June 2022



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THE BEST PAPERS AUTHORED AND PRESENTED
BY A RESEARCHER YOUNGER THAN 35 YEARS IN AGE
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&
BEST CONFERENCE PAPER AWARD**



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Social Conference Activities for accompanying person

Thursday 2nd June 2022, from 10.00am

WELLNESS PROGRAM:

Finnish sauna, Turkish bath,
Kneipp path, chromatic and
aromatic shower, salt room
and use of the therapeutic
indoor pool (37°)
and Full Body Massage
-20 minutes



Thursday 2nd June 2022, from 2.20pm

TOUR OF THE ISLAND OF ISCHIA BY BOAT:

(Half day, lasting about 3 hours)



Departure from the hotel at 2.20 pm, boarding at 2.45 pm.

The motorboat runs along the island, continuing to the municipalities of Casamicciola Terme, Lacco Ameno (Bay of S. Montano), Forio (Beach of S. Francesco), Bay of Citara, Bay of "Sorgeto" until reaching S. Angelo (ancient fishing village) with a stop at the village of 1 hour.

After the stop, continue to the Maronti Beach (the largest on the island), San Pancrazio Bay. Return to the Port of Ischia along the Aragonese Castle and the ancient village of Ischia Ponte.

Friday 3rd June 2022, from 10.00am

DISCOVERING THE 6 MUNICIPALITIES OF THE ISLAND OF ISCHIA BY GUIDED BUS:

(Half day, lasting about 3/4 hours)

The tour of the island allows us to get to know the most characteristic places, with panoramas and landscape beauties. Short stops will be made throughout the journey in the particularly suggestive corners of the six municipalities: Ischia, Casamicciola Terme, Lacco Ameno, Forio, Serrara Fontana and Barano; in particular in S. Angelo, an ancient fishing village.




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