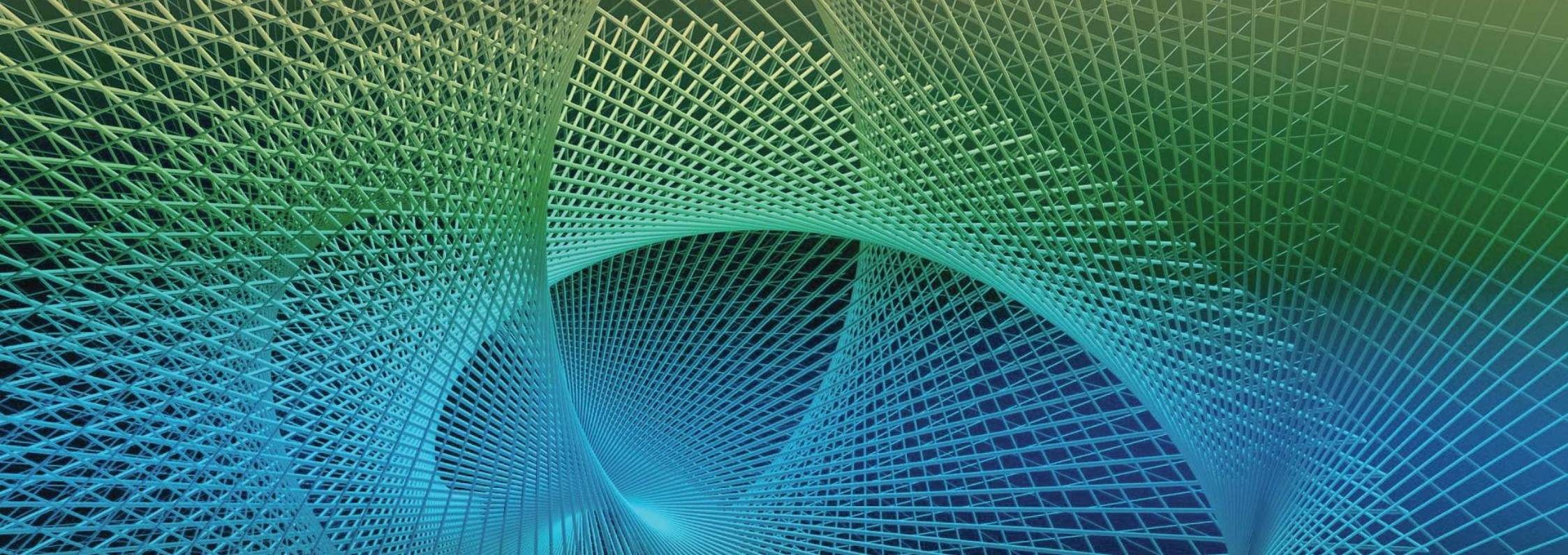




ESREL 2020 - PSAM 15

Affidabilità delle tecnologie, prevenzione e gestione del rischio naturale e tecnologico, per coniugare sicurezza e sostenibilità ambientale

Venezia, 21/26 Giugno 2020

CON IL PATROCINIO DI:

Istituzioni:



Associazioni:



Università:





“Il nostro futuro dipende dalla qualità, **affidabilità** e **sicurezza** dei sistemi e delle infrastrutture che progettiamo e operiamo: se li creiamo «**intelligenti**» e li gestiamo in modo che siano «**affidabili e sicuri**», diventano il motore di uno **sviluppo veloce, duraturo e sostenibile**; altrimenti saranno un peso che ci blocca nel passato”.

Enrico Zio



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Viviamo in un mondo 4.0, fatto da sistemi e infrastrutture sempre più interdipendenti, “sistemi di sistemi” sempre più complessi. Industria 4.0: robotica, droni, automobili a guida autonoma, realtà aumentata e virtuale, dati e intelligenza artificiale, connettività e 5G, città e sistemi intelligenti... lo sviluppo sostenibile e il funzionamento sicuro di questo mondo che stiamo costruendo nel presente e che lasceremo in eredità alle future generazioni, dipende dalla **affidabilità e sicurezza dei sistemi e delle infrastrutture** che lo sosterranno: se li progettiamo e li gestiamo in modo che siano **affidabili e sicuri**, allora sarà un mondo davvero intelligente e sostenibile.

È per contribuire agli sviluppi nella direzione di un mondo intelligente e sostenibile, che un migliaio di esperti di tutto il mondo si troveranno a Venezia nel giugno del prossimo anno, per presentare e discutere metodi, modelli e soluzioni per la prevenzione e gestione del rischio naturale e tecnologico (NaTech), l'affidabilità di componenti, prodotti e sistemi industriali, la sicurezza e resilienza delle infrastrutture critiche.



Per la prima volta in Italia, a Venezia, la conferenza internazionale **ESREL 2020 PSAM 15** unisce la 30° edizione della conferenza annuale European Safety and Reliability (**ESREL**) e la 15° edizione della conferenza biennale Probabilistic Safety Assessment & Management (**PSAM**), in quella che è la manifestazione tecnico-scientifica di settore più importante a livello mondiale.

Con una cadenza periodica di 8 anni, questa conferenza è l'appuntamento irrinunciabile per ricercatori, esperti, professionisti, manager e decisori pubblici che lavorano per gli obiettivi della sicurezza e dell'affidabilità dei sistemi e delle infrastrutture in campo industriale, civile, pubblica amministrazione, università e ricerca. Sotto l'egida delle due associazioni internazionali **ESRA** (European Safety and Reliability Association) e **IAPSAM** (International Association for Probabilistic Safety Assessment and Management), la conferenza potrà contare sul notevole patrimonio di prestigio internazionale, know-how e autorevolezza offerti da queste due associazioni.

È un **evento di grande valore per il sistema-Paese italiano**, in grado di offrire un ricco insieme di opportunità per le aziende ed istituzioni italiane che partecipando avranno modo di accedere a conoscenze, contributi di ricerca, competenze della più elevata comunità scientifica e tecnica internazionale.



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L'evento consentirà a tutti i partecipanti un confronto sulle sfide che le istituzioni e le aziende di diversi ambiti industriali devono affrontare per progettare e assicurare la sostenibilità delle proprie produzioni, operazioni e servizi, la sicurezza dei propri asset, delle infrastrutture, delle persone, e degli ecosistemi, in cui viviamo.

Grazie all'accesso a **più di 800 contributi scientifici e tecnici** selezionati dal Comitato Scientifico, ed alla partecipazione alle lezioni e tavole rotonde plenarie, le aziende e le istituzioni partecipanti avranno l'opportunità di conoscere gli studi, le tecniche, le soluzioni più avanzate rese agibili dalla ricerca scientifica in ambito internazionale, e di comprendere lo stato di avanzamento delle conoscenze sulla progettazione e valutazione dell'affidabilità, sulla manutenzione di componenti e sistemi industriali, e sulla valutazione dei rischi naturali e tecnologici, secondo diverse prospettive e direzioni a favore di uno sviluppo industriale, economico, sociale affidabile e sicuro, e quindi sostenibile.

GLI ORGANIZZATORI

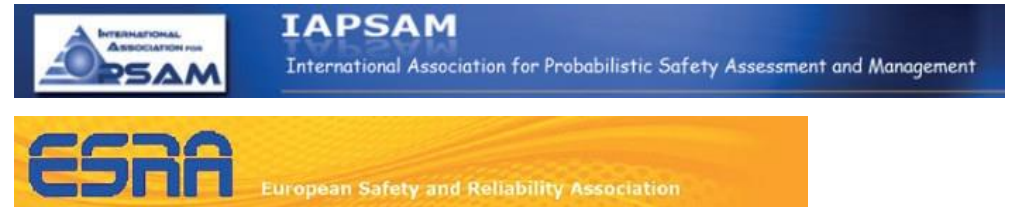


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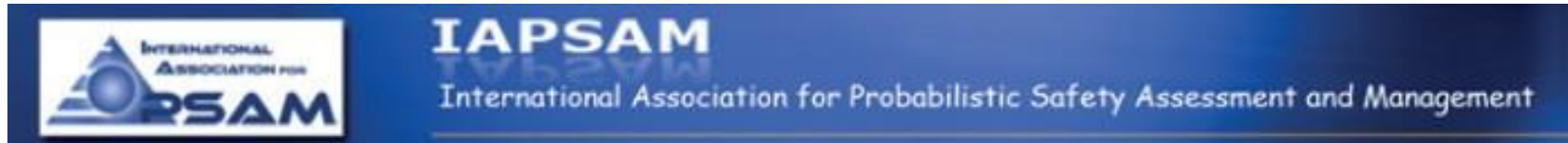
LE ASSOCIAZIONI INTERNAZIONALI ESRA e IAPSAM

Expotech ESREL 2020 PSAM 15 si terrà in Italia, a Venezia, presso il Palazzo del Cinema, dal 21 al 26 Giugno 2020.

In occasione di tale evento, le due associazioni internazionali ESRA (European Safety and Reliability Association) ed IAPSAM (International Association for Probabilistic Safety Assessment and Management), le più importanti nel settore dell'affidabilità, rischio e sicurezza di infrastrutture critiche e sistemi complessi, uniscono le loro competenze per la realizzazione del congresso mondiale più importante sulla scienza e la tecnica al servizio della sicurezza e affidabilità, quindi della sostenibilità.



IAPSAM



La International Association for Probabilistic Safety Assessment and Management (IAPSAM) nasce nel 1991 per iniziativa del Professor George Apostolakis del Massachusetts Institute of Technology (MIT), con l'obiettivo di creare un forum in cui operatori ed analisti possono incontrarsi e scambiare idee in merito all'analisi dei rischi. Questo ha portato all'organizzazione della prima conferenza PSAM nel 1991, sotto la presidenza del Professor George Apostolakis, cui ne seguirono oltre quattordici con cadenza biennale, fino alla 15ma edizione che si terrà a Venezia nel 2020, in congiunzione con la conferenza ESREL 2020 di ESRA.

IAPSAM è una associazione non profit, il cui unico scopo è l'organizzazione del ciclo di conferenze PSAM.

www.iapsam.org

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Korea Atomic Energy Research Institute, South Korea

Curtis Smith: President of IAPSAM

Curtis Smith, Ph.D., is a Directorate Fellow in the Risk Assessment and Management Services Department at Idaho National Laboratory, USA.

Dr. Smith has been in the risk and reliability assessment field for more than 25 years. He has worked at INL as a risk analysis specialist and has worked as a consultant for a diverse set of organizations including the Department of Energy, the Nuclear Regulatory Commission (NRC), the National Aeronautics and Space Administration (NASA), the International Atomic Energy Agency (IAEA), the Federal Aviation Administration (FAA), and other government and private companies.

Dr. Smith has published over 190 papers, books, and reports on risk and reliability theory and application. He has taught over 100 technical and university courses on a variety of reliability and safety topics. He holds a Ph.D. in nuclear engineering from Massachusetts Institute of Technology. He is a member of the American Society of Mechanical Engineers, American Nuclear Society, and the Idaho Academy of Sciences.

ESRA



The European Safety and Reliability Association (ESRA) is a non profit association, in Bruxelles, Belgium. It aims at the promotion and application of safety and reliability techniques and risk management in all branches of technology.

In particular, ESRA pursues the following goals:

- To assure the establishment of an information network between the members and various industrial, academic and professional organizations and other interested persons
- To promote and encourage good practices in the application of safety and reliability techniques and risk management
- To promote cooperation between national professional associations, standardization organizations, industrial and equivalent groups or associations assuring the mutual exchange of information in the area of safety and reliability
- To promote the formation of professional societies or associations in European Union member states where they currently do not exist
- To encourage the role of national societies or associations, at both national and international levels
- To assure contacts with organizations active in the area, both inside and outside the European Union member states
- To promote relevant education and technical training, and harmonize their practices

ESRA organizes every year, the ESREL (European Safety and Reliability Conference) with the aim of providing a stimulating environment and a multidisciplinary forum for exchange of knowledge and expertise on risk, safety and reliability theories and methods, on their application to a wide range of industrial, civil and social sectors and problem areas.

www.esrahomepage.eu

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Marko Čepin: President of ESRA

Prof. Dr. Marko Čepin received his B.Sc., M.Sc. and Ph.D. degrees from the University of Ljubljana, Slovenia, in 1992, 1995 and 1999, respectively.

He was employed at Jožef Stefan Institute in the years from 1992 to 2009.

He is a president of Nuclear Society of Slovenia (2010-2014, 2014-2018).

He is a professor at the Faculty of Electrical Engineering, University of Ljubljana, from the year 2009.

His research interests include energy engineering, power plants and reliability of power systems.

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Il programma scientifico della conferenza è affidato
al prof. Enrico Zio del Politecnico di Milano e del Mines Paris Tech.



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Enrico Zio

*CRC - Centre de recherche sur les Risques et les Crises, Mines ParisTech,
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Eminent scholar at Kyung Hee University, Republic of Korea
Distinguished guest professor at Tsinghua University, China
Adjoint Professor at Beihang University, City University of Hong Kong
and Wuhan University, China
Co-Director of the Center for REliability and Safety of Critical
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Johan Sörman

Lloyd's Register, Stockholm, Sweden

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Industrial and Institutional Relations:

Oplos s.r.l., Italy



AGENZIE GOVERNATIVE, LABORATORI DI RICERCA, UNIVERSITÀ, AZIENDE POTENZIALI PARTECIPANTI

(sulla base della partecipazione alle precedenti edizioni)



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AGENZIE GOVERNATIVE e LABORATORI di RICERCA

AFRICA

AFRICA	Abibimman Foundation National Nuclear Regulator
EGYPT	Egyptian Atomic Energy Authority, Nuclear Research Center

AMERICA

ARGENTINA	Comisión Nacional de Energía Atómica
BRASIL	Assoc. Brasileira de Risco, Seg. Processo e Confiabilidade -ABRISCO Brazilian Army Comissão Nacional de Energia Nuclear, CNEN (Brazilian Regulatory Commission) - CTMSP
CANADA	Canadian Nuclear Safety Commission Technical Standards and Safety Authority
MEXICO	Comisión Nacional de Energía Atómica
USA	B. John Garrick Institute for the Risk Sciences Bechtel Marine Propulsion Corporation Brookhaven National Laboratory Electric Power Research Institute - EPRI Food and Drug Administration - FDA Idaho National Laboratory - INL Institute of Nuclear Power Operations - INPO NASA - JPL NASA - JSC NASA Glenn Research Center National Institute of Aerospace National Institute of Standards and Technology - NIST Nuclear Energy Institute - NEI Nuclear Regulatory Commission - USNRC Oak Ridge National Laboratory - ORNL Pacific Northwest National Laboratory - PNNL Sandia National Laboratories - SNL Stevens Institute of Technology

ASIA

ARMENIA	Nuclear and Radiation Safety Center
CHINA	China Academy of Transportation Sciences China National Technical Service Corporation For Surveying and Mapping China Nuclear Power Technology Research Institute China Satellite Navigation Office China Waterborne Transport Research Institute Hefei Institutes of Physical Science, Chinese Academy of Sciences Nanjing Institute of Technology Nuclear Power Institute of China Shanghai Nuclear Engineering Research & Design Institute
JAPAN	Central Research Institute of Electric Power Industry - CRIEPI Electronic Navigation Research Institute Institute of Nuclear Safety System, Inc. Japan Atomic Energy Agency Japan Nuclear Energy Safety Organization - JNES Japan Nuclear Safety Institute Japan Nuclear Technology Institute National Institute of Occupational Safety and Health, Japan National Maritime Research Institute
KOREA	Korea Advanced Institute of Science and Technology - KAIST Korea Atomic Energy Research Institute - KAERI Korea Institute of Nuclear Safety Korea Railroad Research Institute
LITHUANIA	Lithuanian Energy Institute
SINGAPORE	Future Resilient Systems, Singapore - ETH Centre
TAIWAN	Institute of Nuclear Energy Research, Taiwan
THAILAND	Thailand Institute of Nuclear Technology

AGENZIE GOVERNATIVE e LABORATORI di RICERCA

EUROPA

INTERNATIONAL	European Railway Agency - ERA European Commission - Joint Research Centre
AUSTRIA	Agenzia Internazionale per l'Energia Atomica - IAEA
FINLANDIA	Finnish Meteorological Institute Finnish Safety and Chemicals Agency Radiation and Nuclear Safety Authority - STUK Technical Research Centre of Finland - VTT TVO
FRANCIA	CEA Cadarche Commissariat à l'Energie Atomique Institut de Radioprotection et de Sécurité Nucléaire - IRSN Institut National de l'Environnement Industriel et des Risques - INERIS
GERMANIA	Bundesamt für Strahlenschutz Federal Institute for Materials Research and Testing - BAM Federal Office for Radiation Protection Fraunhofer IESE German Aerospace Center Karlsruhe Institute of Technology - KIT Ministry of the Environment, Climate Protection and the Energy Sector Baden-Wuerttemberg TÜV SÜD Energietechnik GmbH BW
GRECIA	National Centre for Scientific Research "Demokritos"
ITALIA	Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile - ENEA Consiglio Nazionale delle Ricerche - CNR Istituto nazionale Assicurazione Infortuni sul Lavoro - INAIL Istituto Superiore per la Protezione e la Ricerca Ambientale - ISPRA Laboratori Nazionali del Gran Sasso - INFN-LNGS
NORVEGIA	Institute for Energy Technology OECD Halden Reactor Project, Institute for Energy Technology - IFE SINTEF
OLANDA	Air Transport Safety Institute - NLR National Institute for Public Health and the Environment - RIVM TNO

REP.CECA	Inst. of Construction and Architecture, Slovak Academy of Sciences Klokner Institute CTU in Prague Nuclear Research Institute Rez
RUSSIA	Moscow Power Engineering Institute Scientific and Engineering Center for Nuclear and Radiation Safety Ufa State Academy of Economics and Service
SLOVENIA	Jozef Stefan Institute
SPAGNA	Empresarios Agrupados
SVEZIA	Lloyd's Register Royal Institute of Technology - KTH Swedish Radiation Safety Authority
SVIZZERA	Swiss Federal Nuclear Safety Inspectorate - ENSI Paul Scherrer Institute - PSI
UK	British Geological Survey Concrete Repair Association - CRA Human Reliability Associates National Oceanography Centre
UKRAINA	State Nuclear Regulatory Inspectorate of Ukraine
UNGHERIA	Hungarian Atomic Energy Authority Nuclear Safety Research Institute - NUBIKI

UNIVERSITÀ

AFRICA

ALGERIA	Université Frères Mentouri de Constantine 1 Algery
ETIOPIA	Wolaita Sodo University
SUD AFRICA	University of the Free State

AMERICA

BRASILE	Centro Tecnológico da Marinha em São Paulo Federal University of Pernambuco Federal University of Rio de Janeiro University of Campinas University of São Paulo
CANADA	Memorial University University of Alberta
CHILE	Universidad Técnica Federico Santa María University of Chile
MESSICO	National Autonomous University of Mexico - UNAM
USA	California State University Colorado School of Mines Florida Tech George Washington University Georgia Institute of Technology Grad School Applicant Johns Hopkins University Massachusetts Institute of Technology - MIT Ohio State University Old Dominion University Rensselaer Polytech Institute Rice University Stanford University UCLA University of Arkansas University of Maryland University of Massachusetts University of Oklahoma University of Southern California University of Wisconsin-Madison Vanderbilt University

UNIVERSITÀ

ASIA

CINA	Beihang University China Academy of Space Technology China Astronautics Standards Institute Chinese Science of Academy City University of Hong Kong National University of Defense Technology North China Electric Power University Northwestern Polytechnical University Tsinghua University University of Science and Technology of China University of South China Wuhan University of Technology
IRAN	Islamic Azad University Sahand University of Technology University of Applied Science and Technology Iran University of Teheran
GIAPPONE	Hosei university Kanto Gakuin University Kobe University Kyoto University National Defense Academy of Japan Nihon University Osaka University Tokyo City University Tokyo Institute of Technology University of Tokyo Utsunomiya University Yokohama National University
KOREA	Chosun University Chung-Ang university Hanyang University KEPCO International Nuclear Graduate School Kyung Hee University Sejong University
MALESIA	Universiti Malaysia Sarawak - UNIMAS Universiti Teknologi Petronas
SINGAPORE	National University of Singapore - NUS

AUSTRALIA

AUSTRALIA	Australian Catholic University Queensland University of Technology University of Western Australia University of Perth
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UNIVERSITÀ

EUROPA

AUSTRIA	University of Natural Resources and Applied Life Sciences - BOKU
BELGIO	Ghent University Université libre de Bruxelles University of Antwerp University of Mons KU Leuven
BULGARIA	Technical University of Sofia / Kozloduy NPP
DANIMARCA	Technical University of Denmark
ESTONIA	Tallinn University of Technology
FINLANDIA	Aalto University Tampere University of Technology Teknillinen korkeakoulu (eläkkeellä) University of Helsinki University of Turku
FRANCIA	Centre National d'Études Spatiales - CNES Ecole Centrale Paris Ecole des Mines de Nantes Ecole Normale Supérieure de Cachan Ecole Polytechnique Grenoble University Mines Paristech National School of Engineering of Metz Paris-Est University SUPELEC Université de Bordeaux Université de Pau et des Pays de l'Adour Université de Toulouse Université de Evry University of Technology of Compiègne University Toulouse 3

GERMANIA	Brandenburg University of Technology Haugesund/Stord University College Hochschule Mannheim - University of Applied Sciences Otto-von-Guericke-Universität Technical University of Munich - TUM TU Braunschweig TU Clausthal TU Dresden TU Ilmenau TU Kaiserslautern Universität Paderborn University of Hohenheim University of Kaiserslautern University of Kassel University of Stuttgart University of Wuppertal
ITALIA	Bocconi University Politecnico di Milano Politecnico di Torino Università degli Studi dell'Insubria Università di Bologna Università di Brescia Università di Catania Università di Cassino Università di Firenze Università di Pisa Università di Salerno Università degli Studi di Messina Università La Sapienza
PAESI BASSI	TU Delft

UNIVERSITÀ

NORVEGIA	Norwegian University of Science and Technology - NTNU Stord/Haugesund University College Trondheim University University of Oslo University of Stavanger University of Tromsø
PAESI BASSI	Netherlands Defence Academy
POLONIA	Gdansk University of Technology Gdynia Maritime University Maritime University of Szczecin Polish Naval University Rzeszow University of Technology Silesian University of Technology Warsaw University of Technology Wroclaw University of Technology
PORTOGALLO	Instituto Politécnico de Viseu Instituto Superior Tecnico, Lisboa University Fernando Pessoa University of Minho University of Porto
REP. CECA	Brno University of Technology Czech Technical University in Prague Technical University of Liberec Technical University of Ostrava Teesside University University of Defence University of Pardubice Univerzita Obrany
ROMANIA	University of Bucharest University of Oradea
SERBIA	University of Kragujevac Serbia
SLOVACCHIA	Ilinská univerzita v Ziline
SLOVENIA	University of Ljubljana

SPAGNA	Comillas Pontifical University Universidad Politecnica de Valencia - UPV Universidad Politécnica de Madrid - UPM Universitat Politècnica de Catalunya University of Extremadura University of Granada University of Seville University of Valencia
SVEZIA	Linnaeus University Luleå university of technology Lund University Royal Institute of Technology
SVIZZERA	ETH Zurich Zurich University of Applied Sciences
UK	City University of London Durham University Liverpool John Moores University Loughborough University Newcastle University University of Edinburgh University of Liverpool University of Nottingham University of Strathclyde University of York

AZIENDE

AMERICA

AMERICA	ABS Consulting Aerospace Corporation Alejo Engineering ASCA Inc. Booz Allen Hamilton Buttonwood Consulting, Inc. Centroid Lab Cogoto, Inc. CRG LLC Curtiss Wright Flow Control Engineering Mechanics Corporation of Columbus Engineering Planning and Management, Inc. EPM, Inc. Erin Engineering and Research, Inc. General Electric GNBC Associates Inc Item Software Jensen Hughes John Wreathall & Co., Inc. Kazarians & Associates, Inc. Kinectrics, Inc. KNF Consulting Services LLC Maracor Technical Services, Inc. McCarthy Engineering Measurement Analysis Corporation N&A Thadani Consultants SAIC Scientech, Curtiss-Wright Flow Control Shell E&P Company Soteria Consultants STP Nuclear Operating Co. TerraPower Valador, Inc. Westinghouse Electric Company
CANADA	AMEC NSS Ltd. New Brunswick Power Nuclear Corp. Ontario Power Generation
SUDAMERICA	Petrobras Sepi-Esime Zac, IPN White Martins (Praxair Inc.)

ASIA

CINA	China Nuclear Power Engineering Co., Ltd. Suzhou Nuclear Research Institute Co., Ltd
INDIA	LR Scandpower Risk Consultancy Pvt. Ltd.
IRAN	SAIPA Automotive Corporation
GIAPPONE	Appendix R Solutions Chiyoda Advanced Solutions Corporation CSA of Japan Co., Ltd. Genden Information System Company Hitachi-GE Nuclear Energy, Ltd. Japan Nuclear Fuel Ltd Kajima Corporation Kansai Electric Power Co., Inc. Mitsubishi Heavy Industries, LTD. Nuclear Engineering, Ltd. TEPCO Systems Corporation Tokyo Electric Power Services Co., Ltd TOSHIBA Corporation Toshiba Energy Systems & Solutions
KOREA	FNC Technology KEPCO Korea Hydro & Nuclear Power - KHNP

AZIENDE

EUROPA

BELGIO	Bel V Electrabel Tractebel Engineering
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DANIMARCA	Maersk Drilling
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FRANCIA	Areva Astrium DaimlerAG EADS Innovation Works Electricité de FRANCE - EDF Orange Labs Pi-Ramses Predict RATP SatodevSas SNCF Thales Optronique Volvo Group

GERMANIA	E.ON Kernkraft GmbH, Kernkraftwerk Unterweser EnBW Kernkraft GmbH Forsmarks KraftgruppAB Framatome GmbH GNS - Gesellschaft für Nuklear Service GmbH GRS GmbH Howaldtswerke Deutsche Werft GmbH NUKEM Technologies GmbH RISA Sicherheitsanalysen GmbH Vattenfall Europe Nuclear Energy GmbH Vossloh Kiepe
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NORVEGIA	eSmart Systems Jongejan RMC Proactima AS Statoil
PAESI BASSI	Libertas in Vivo v.o.f.
POLONIA	Isl ReliaSoft Corporation
PORTOGALLO	Energias De Portugal, Sa - EDP

AZIENDE

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SLOVACCHIA	Relko Ltd
SPAGNA	Iberdrola
SVEZIA	ES konsult Kiwa Inspecta Lloyd's Register Consulting - EnergyAB OKG AB Ringhals AB Risk Pilot AB Saab Aeronautics/Linköping University Scandpower AB
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UKRAINA	SSTC
UNGHERIA	MVM Paks Nuclear Power Plant Ltd Nuclear Power Plant Paks Ltd.

MAPPA DEI PARTECIPANTI

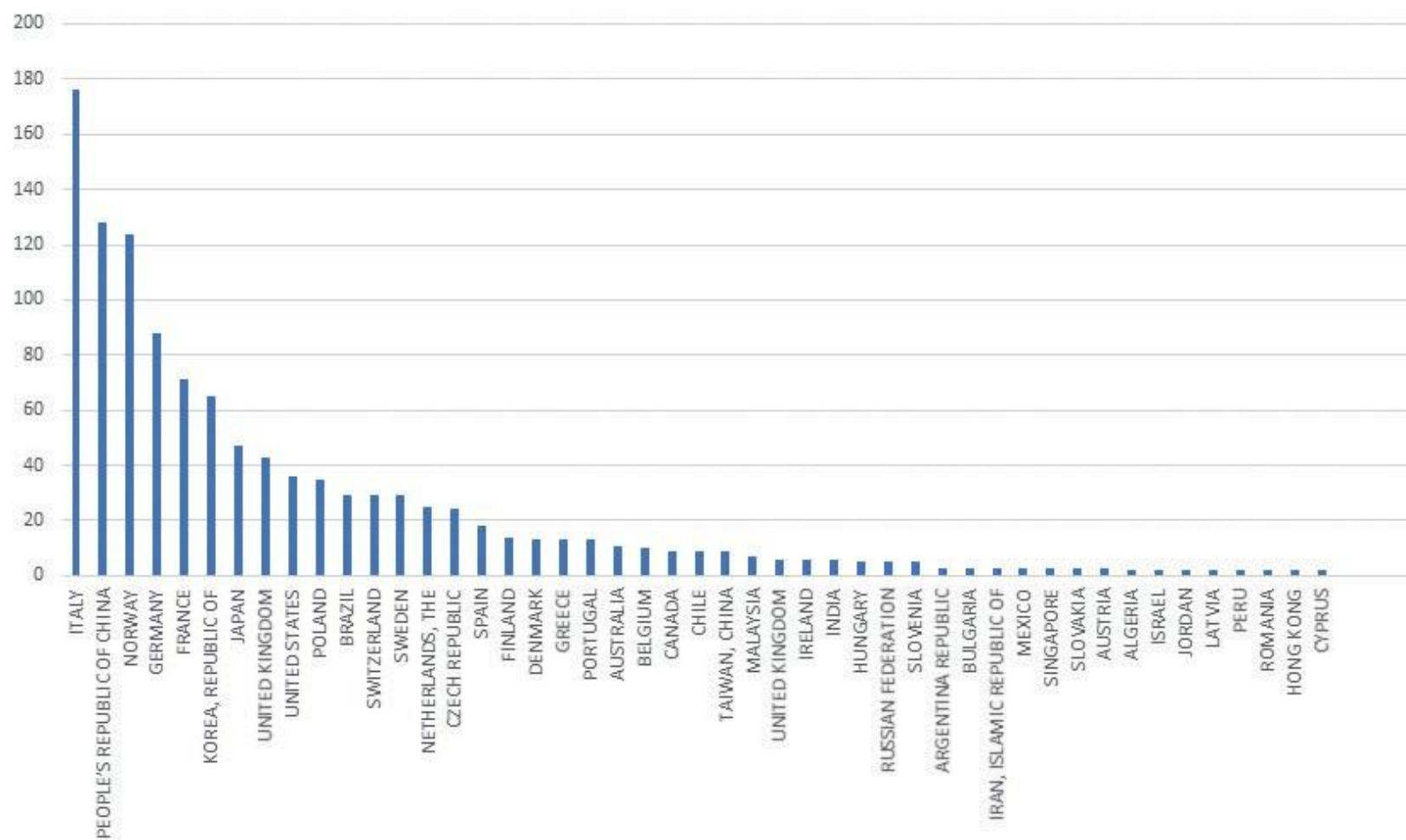
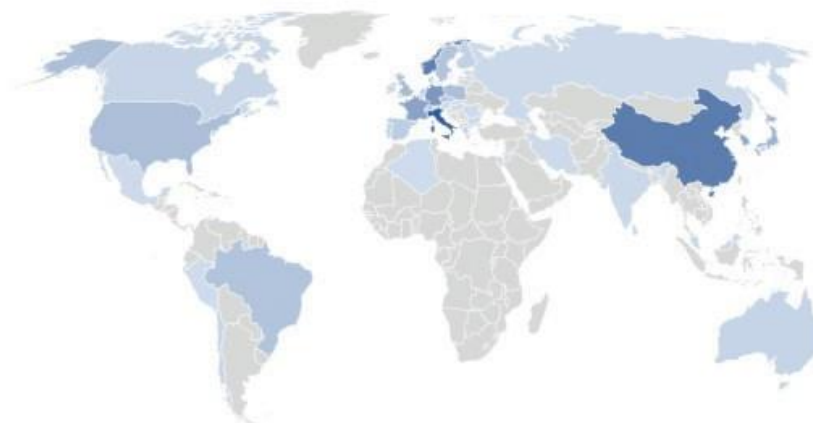
Statistiche sui paesi di origine in base agli abstract ricevuti



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PAESI DI ORIGINE DEI PARTECIPANTI

(in base agli abstract ricevuti)



ABSTRACT IN DETTAGLIO

Numero di abstract ricevuti: 1250

Numero di abstract in Methodological Tracks: 882

Numero di abstract in Application Tracks: 368

- Aerospace and Aeronautics: 32

- Automotive: 35

- Railway: 31

- Energy: 98

- Other Sectors: 172

PROGRAMMA 21/26 GIUGNO 2020

in via di definizione



EXPOTECH
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DAY	PARALLEL SESSIONS														
WEDNESDAY 24 JUNE	10:30	12:15		Prognostics and Health Management	Risk Assessment in the Automotive industry	Risk Assessment in Civil Engineering	Environmental Risk Analysis	Risk Assessment in the Nuclear Industry	Computational Risk Assessment	Risk Prevention	Optimization of Reliability Maintenance and Safety	Virtual Reality for Safety	Consequence Modeling and Management	Special Session: "Life Cycle-Based Resilience Assessment and Management of Structural and Infrastructural Assets" organized by Omar Kammouh et al. (Delft University of Technology, The Netherlands)	Human Factors and Human Reliability
	12:30	13:40	LUNCH												
	13:45	15:45	PANEL: OPEN SLOT	Prognostics and Health Management	Resilience of Land Transportation	Insurance, Banking and Finance Risk Assessment	Internal Hazards Risk Assessment	Special Session: "Multi-Unit Nuclear Plant PSA" organized by Dennis Henneke (GE Hitachi Nuclear Energy, USA)	Computational Risk Assessment	Risk Prevention	Optimization of Reliability Maintenance and Safety	Dependence and Common Cause Failures Modeling and Analysis	Site Level Multi-Unit Multi-Source Risk Assessment	Resilience Analysis of Smart cities and Systems	Human Factors and Human Reliability
	15:45	16:10	COFFE BREAK												
	16:15	18:15		Prognostics & Health Management	Risk Assessment of Land Transportation	Structural Health Management	External Hazards Risk Assessment	Special Session: "Bayesian Network Modelling for Risk Assessment in the Oil&Gas Industry" organized by Luca Decarli (Eni, Italy)	Computational Risk Assessment	Safety Culture	Optimization of Reliability Maintenance and Safety	System Reliability	Site Level Multi-Unit Multi-Source Risk Assessment	Medical Risk	Organizational Factors

DAY			PARALLEL SESSIONS													
THURSDAY 25 JUNE	8:30	10:15		Prognostics & Health Management	Risk Assessment in the Aeronautics and Aerospace Industry	Structural Reliability	External Hazards risk assessment	Risk Assessment in the Oil and Gas Industry	Artificial Intelligence for reliability maintenance and safety	Dynamic Reliability/Risk Assessment	Optimization of Reliability Maintenance and Safety	System Reliability	Disaster Manegement	Special Session: "Advanced Diagnosis and Prognosis in Bio-medical Engineering" organized by Shaoping Wang (Beihang University, China)	Organizational Factors	
	10:15	10:40	COFFE BREAK													
	10:45	11:30	PLENARY LECTURE: OPEN SLOT													
	11:45	12:15		TOPICAL KEYNOTE: OPEN SLOT												
	12:40	14:00	LUNCH													
	13:45	15:45		Special Session: "Artificial Intelligence for Maintenance Decision Support" organized by Christophe Bérenguer (University of Grenoble Alpes, France), Pierre Dersin (Alstom Digital Mobility, France), Olga Fink (ETHZ, Switzerland)	Fleet Management in the Aeronautics and Aerospace Industry	Structural Reliability	Natural Hazards Risk Assessment	Risk Assessment in the Oil and Gas Industry	Artificial Intelligence for reliability maintenance and safety	Dynamic Reliability/Risk Assessment	Uncertainty and Sensitivity Analysis	System Reliability	Crisis management	Quality	Risk Perception and Communication	
	15:45	16:10	COFFE BREAK													
	16:15	18:15	PANEL: OPEN SLOT			Special Session: "Artificial Intelligence for Maintenance Decision Support" organized by Christophe Bérenguer (University of Grenoble Alpes, France), Pierre Dersin (Alstom Digital Mobility, France), Olga Fink (ETHZ, Switzerland)	Maintenance in the Aeronautics and Aerospace Industry	Structural Reliabilit	Natural Hazards Risk Assessment	Risk Assessment in the Maritime and Offshore Technology	Artificial Intelligence for reliability maintenance and safety	Dynamic Reliability/Risk Assessment	Uncertainty and Sensitivity Analysis	System Reliability	Risk Management	Economic Analysis in Risk Management

DAY			PARALLEL SESSIONS												
FRIDAY 26 JUNE	8:30	10:15		Predictive Maintenance	Risk Assessment in Water Transportation Systems	Structural Reliability	Geological Risk Assessment	Risk assessment in the Energy Industry	Special Session: "NLP, knowledge graphs and ontologies" organized by Melinda Hodkiewicz (University of Western Australia)	Dynamic Reliability/Risk Assessment	Uncertainty and Sensitivity Analysi	Risk Informed Applications	Risk Management	Safety Culture	Risk Analysis and Safety in Standardization
	10:15	10:40	COFFE BREAK												
	10:45	11:25	Plenary Lecture: "AI-Based Reliability Engineering" by Michael Pecht (University of Maryland, USA)												
	11:30	12:15	PLENARY LECTURE: OPEN SLOT												
	12:30	13:40	LUNCH												
	13:45	15:45	PANEL: OPEN SLOT	Predictive Maintenance	Human Factors in Transportation	Innovation Challenge: Prognostic and Health Management in Evolving Environments	Dependability	Risk Assessment in the Renewable Energy Industry	Artificial Intelligence for reliability maintenance and safety	Dynamic Reliability/Risk Assessment	Uncertainty and Sensitivity Analysis	Risk Informed Applications	Risk Management	Innovation Challenge: The NASA Langley UQ Challenge on Optimization under Uncertainty	Risk Analysis and Safety in Standardization
	15:45	16:30	CLOSURE COCKTAIL												

POSSIBILI PANELS / ROUNDTABLES

in via di definizione

POSSIBILI KEYNOTE SPEAKERS

in via di definizione



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PANELS & ROUNDTABLES

(da confermare)

SECURITY IN INDUSTRY

ARTIFICIAL INTELLIGENCE AND BIG DATA FOR RELIABILITY AND SAFETY

RESILIENCE OF CRITICAL INFRASTRUCTURES

RISK ACCEPTANCE CRITERIA AND GOVERNANCE

RELIABILITY AND SAFETY FOR INDUSTRY: CHALLENGES

INDUSTRY 4.0: OPPORTUNITIES AND RISKS

KEYNOTE SPEAKERS

(da confermare)



Julie Albright

Ph.D., University of Southern California,
Viterbi School of Engineering and Applied Psychology

Dr. Julie Albright is a Sociologist specializing in digital culture and communications; She has a Masters Degree in Social and Systemic Studies from Nova SouthEastern University and a Dual Doctorate in Sociology and Marriage and Family Therapy from the University of Southern California. Dr. Albright is currently a Lecturer in the departments of Applied Psychology and Engineering at USC, where She teaches master's level courses on the Psychology of Interactive Technologies and Sustainable Infrastructure.

Dr. Albright's research has focused on the growing intersection of technology and social / behavioral systems: She was the Co-PI and Project Lead for the Behavioral Component of a \$121 million Smart Grid Demonstration Project with LA Dept of Water and Power, the USC Information Sciences Institute (ISI), the Jet Propulsion Lab (JPL) and UCLA, funded by the U.S. Dept. of Energy.

She is also a sought after keynote speaker for her insights, and has given talks for major data center and energy conferences including SAP for Utilities, IBM Global, Data Center Dynamics and the Dept. of Defense. She has appeared as an expert on national media including the Today Show, CNN, NBC Nightly News, CBS, the Wall Street Journal, New York Times, NPR Radio and many others.

Her book on the impacts of mobile - social - digital technologies on society - Left to Their Own Devices: How Digital Natives Are Reshaping the American Dream - will be published Fall 2018 from Random House/Prometheus. Her next project will be a documentary television series or film on the book by award winning filmmaker, David Hoffman.

Risk and Resilience of Critical Infrastructure Systems in an Untethered World

Critical infrastructures are increasingly being transformed into “smart” systems, leaving them vulnerable to risk from both natural and man-made factors. Critical infrastructure systems like energy and water systems or oil and gas networks make attractive targets for hackers. An estimated 40% of industrial computers have already been hacked, including through SCADA industrial control systems, with the Internet the #1 source of industrial system infection. Protecting critical infrastructure systems entails effective cyber risk management. Given the convergence of behavior and technology, any effective risk management program should take a systemic approach, taking into account not only technical but also social/behavioral risk factors, identifying vulnerabilities while forming strategies for prevention, containment, and control. A key driver on the human side of these threats is the “untethering” of workers - e.g., disconnecting from traditional stabilizing social structures including long term careers, while hyper-attaching to digital devices and social media. The resultant values and behavioral shifts are challenging the connective tissue of organizations, via lowered employee retention, waning trust and lack of loyalty. Targeted social media disinformation campaigns can also drive extremism and virtual tribalism, potentially fueling disgruntled employees. This talk will outline these new potential risks as untethering increases, and will outline potential future risk factors driven by the growth in AI and automation.

KEYNOTE SPEAKERS

(da confermare)



Melinda Hodkiewicz

B.A. (Hons) Oxon, PhD (Eng), C.Eng(UK)
Professor and BHP Fellow for Engineering for Remote Operations
Faculty of Engineering and Mathematical Sciences, University of Western Australia

Melinda Hodkiewicz is an engineering academic working on multi-disciplinary projects to improve maintenance, asset management and safety practices. Her academic career started in 2005 after an earlier engineering career in maintenance in the resources industry. She currently has a 5-year A\$1.3M Fellowship at the University of Western Australia funded by BHP, a major resources company. The aim of the Fellowship is to improve academic-industry collaboration and work to support the communities in which BHP operates. She endeavours to do the latter by research that impacts maintenance to make it more productive and safer. In October 2019 she has been elected a Fellow of the Australian Academy of Technology and Engineering.

She has four research areas: ontology and natural language processing of maintenance and safety unstructured records. This work supports validation of remaining useful life models, which in turn assists the maintainer of the future, who will be using MEMS-IIOT sensing systems for industrial maintenance applications. She works with academic and industry collaborators from a wide range of disciplines in a number of different countries.

Organisationally she co-leads the data science program for the \$10M ARC funded Offshore Structures Hub, manages the UWA Critical Mass Research group on Engineering System Health, leads the UWA System Health Lab, and has conventional academic and teaching responsibilities. She also holds two external national positions, one as a member of the Board of Australia's National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and the other on the advisory committee for the Australian Government's mining equipment, technology and services (METS) Ignited Growth Centre, one of the six Government Growth Centres charged with distributing A\$238M of funds 2017-2021. She is currently a visitor at the Alan Turing Institute, this is the national centre for data science in the UK.

In October 2019 she has been elected a Fellow of the Australian Academy of Technology and Engineering.

Professor Hodkiewicz is an international leader in asset management through research, education and digitalization.

Maintenance in an industry 4.0 world - transforming maintenance through data science

Maintenance management practices underpin the export earnings and infrastructure of our national economies but these practices have changed little in the last 20 years. Global companies are trying to bring computational methods, statistics, and artificial intelligence to determine how, when and why maintenance is conducted. However, evidence of positive return on investment is patchy. In an Industry 4.0 world, we need to be able to apply data science methods to maintenance at scale. The slow uptake by maintenance personnel of these methods is due to poor prediction performance in practice and lack of validation of these algorithms in the field. Solutions include natural language processing and ontologies for unlocking data in inspection and repair records, bayesian methods for supporting asset-specific predictions under uncertainty, and culture evolution for shifting to secure sharing of industry data and codes. Together, these developments are building transparency and trust in prediction recommendations for maintenance.

KEYNOTE SPEAKERS

(da confermare)



Chris Johnson

Professor and Head of Computing, Glasgow University, UK

Chris Johnson is Professor and Head of Computing at the University of Glasgow. He is also Director of the UK Cyber Defence Lab, which focuses on the cyber security of national critical infrastructures. He has held fellowships from NASA, the US Air Force and the US Navy and in 2019 completed cyber risk assessments for the infrastructure supporting UK aviation (for the Department for Transport) and European Air Traffic Management (for the EC Network Manager). He co-authored United Nations guidance on the cyber security of CBRN installations and is working with the UN-ICAO on guidance in aviation.

The technical focus of his work identifies mitigations that can be used in both safety and security critical contexts where, for instance, the introduction of intrusion detection or network segregation must not compromise safety requirements.

Overcoming Regulatory Barriers to the Application of Machine Learning in Safety and Security Critical Applications

Many international standards including IEC 61508, ISO 26262 and EN 50126 place either explicit or implicit barriers to the use of Machine Learning in safety-critical applications, especially at higher levels of integrity. Traditional approaches to the development of high-reliability systems use risk assessment techniques to focus resources on software that makes the greatest contribution to the mitigation of functional hazards. At the higher levels of integrity, this requires the use of deterministic verification and validation techniques based on strong assumptions about the eventual context of use. They also imply high levels of traceability and of transparency that enable independent inspection, for instance by regulatory agencies. In contrast, machine learning algorithms have proven to be extremely effective in identifying statistical patterns in complex data without necessarily making the justifications for the correlations in training sets transparent either to external agencies, to the software developers or to end users.

In this talk we will present a range of techniques that have been pioneered, often for use in military applications, that provide regulatory agencies and assessment boards with the confidence that is required to permit the use of Machine Learning in Safety-Critical Systems. In many cases, these techniques limit the application of ML, for example, to advisory approaches in which the human remains in ultimate control. Other approaches extend conventional methods from high-reliability engineering, including massive exposure to potential operating environments through “exhaustive” testing. These techniques are unlikely to satisfy the growing demand for the integration of autonomous and semi-autonomous systems into a host of application domains. Analytical approaches to representing and reasoning about ML, often shift the problem away from understanding these algorithms but create further problems for regulators and end users in understanding the underlying mathematical abstractions that support the analysis. We will conclude the presentation by explaining how hybrid ML and deterministic algorithms can be integrated with the appropriate use of adversarial networks to increase confidence in ML applications and yet still retain sufficient prospect that these approaches will yield significant operational benefits in complex, uncertain safety-related domains.

KEYNOTE SPEAKERS

(da confermare)



Michael Pecht

Chair Professor and Director
Center for Advanced Life Cycle Engineering (CALCE)
University of Maryland

Prof Michael Pecht (25,000+ citations, 70+ H-Index) has a BS in Physics, an MS in Electrical Engineering and an MS and PhD in Engineering Mechanics from the University of Wisconsin. He is a Professional Engineer, an IEEE Fellow, an ASME Fellow, an SAE Fellow and an IMAPS Fellow. He served as editor-in-chief of IEEE Access for six years, as editor-in-chief of IEEE Transactions on Reliability for nine years, and editor-in-chief of Microelectronics Reliability for sixteen years. He has also served on three U.S. National Academy of Science studies, two US Congressional investigations in automotive safety, and as an expert to the U.S. FDA. He is the Director of CALCE (Center for Advanced Life Cycle Engineering) at the University of Maryland, which is funded by over 150 of the world's leading electronics companies at more than US\$6M/year. He is also a Chair Professor. He has written more than twenty books on product reliability, development, use and supply chain management. He has also written a series of books of the electronics industry in China, Korea, Japan and India. He has written over 700 technical articles and 10 patents. In 2015 he was awarded the IEEE Components, Packaging, and Manufacturing Award for visionary leadership in the development of physics-of-failure-based and prognostics-based approaches to electronics reliability. He was also awarded the Chinese Academy of Sciences President's International Fellowship. In 2010, he received the IEEE Exceptional Technical Achievement Award for his innovations in the area of prognostics and systems health management. In 2008, he was awarded the highest reliability honor, the IEEE Reliability Society's Lifetime Achievement Award.

AI based Reliability Engineering

The Internet of Things is not only permitting the sensing and control of numerous products and systems but enabling autonomous activities and the collection of otherwise unattainable information. With this information we can now assess a system under its actual application conditions and anticipate its operational behavior. One goal is to integrate sensor data with models that enable in-situ assessment of the "health" (e.g. deviation or degradation) of a system from an expected normal operating condition and also predict the future state of the system based on current and historic conditions. This presentation discusses the methods used, what companies have already implemented, and the possibilities for the future.

KEYNOTE SPEAKERS

(da confermare)



Georg Peter

Head of Unit, Technology Innovation in Security
European Commission, Joint Research Center
EU

Dr.-Ing. Georg Peter, born in 1959 in Frankfurt, Germany, holds a degree as Mechanical Engineer and a Ph.D. in nuclear safety. He joined the European Commission in 1989 as a research engineer in the Joint Research Center in Ispra analysing accident scenarios in nuclear power plants and in hydrocarbon facilities by developing and applying complex computer simulation models.

After having been responsible for the Safety & Security Unit of the JRC Ispra site, he was appointed as Head of the Unit “Technology Innovation in Security” in the Directorate “Space, Security and Migration” of the Joint Research Center of the European Commission.

His team is dealing with innovative solutions for the protection and resilience of critical infrastructures in Europe, hybrid threats, advanced radio signal processing such as 5G, spectrum sharing and interference studies, scientific support to the European Global Navigation Satellite System Galileo, hazards in chemical industry and consequences of natural hazards to technological installations as well as possible policy aspects of future quantum technologies.

A conceptual framework to counter Hybrid Threats that change the security paradigm

The European project which has brought unprecedented peace, prosperity and democracy faces severe and acute challenges that undermine its very existence. The current geopolitical situation, emerging security threats and societal challenges are menacing the resilience of European countries and eventually the one of the EU project as a whole. Security is a fundamental issue for European societies. The events in Ukraine have showed that a new realm of security threats has emerged that poses an acute threat to the integrity of a state and that the internal-external security are tightly linked. In addition, security is linked with the citizens’ perceptions about a country’s governance performance. As a consequence, addressing security challenges is not anymore an exclusive competence of security professionals and related policy makers. It is much broader requiring a serious and systematic consideration of societal aspects and changes. The Digital Transformation of our society, migration and Artificial Intelligence (just to name a few) are changing completely the way societies will function in the next decades. The limits between traditional disciplines are blurring and actually create a continuum upon which policy makers need to act. The EU has recognized the need to act in a holistic manner in the domain of security and has published two communications on the issue of Hybrid Threats. Hybrid Threats are the mixture of coercive and subversive activity,

conventional and unconventional methods (i.e. diplomatic, military, economic, technological), which can be used in a coordinated manner by state or non-state actors to achieve specific objectives while remaining below the threshold of formally declared warfare.

Critical infrastructures are an essential element of hybrid threats. However, compromising their performance is not the final objective but rather the means to more overarching objectives such as affecting the core values of societies and trust to institutions. Disruptive events in critical infrastructures might be leveraged to undermine the trust of citizens to the risk and disaster management capabilities of their government and discredit leadership.

Today internal security is mainly tackled at sectoral level (e.g. cyber security, physical security, fight against terrorism, critical infrastructure protection, etc.). This has to change. Security has to be seen in the context of the overall resilience of the society. The political framework at EU level related to Hybrid Threats supports addressing security related issues in a holistic manner. If the EU aspires to maintain or even increase its role as a global actor as well as maintain a high level of security for its citizens, it is necessary to act urgently and step-up efforts building upon the existing momentum. This requires also a change of thinking in risk analysis.

We have to find answers to questions such as:

- How can we change our risk management approach to improve the protection and resilience of our critical infrastructures given this new complex threat vectors?
- How can we build resilience against security related incidents that aim at leveraging existing societal vulnerabilities in order to potentiate their impact?
- How can we bolster resilience at societal level introducing a whole of governance and whole of society approach?

The JRC responds to these questions by supporting the conceptualization of Hybrid Threats. This aims to assist Member States to identify such threats and support attribution. Tools allowing an early identification of Hybrid Threats are of utmost importance for security analysts in an effort to connect the dots and to get a coherent and overarching view of the security threats. The Conceptual Framework for Hybrid Threats developed jointly by EC Joint Research Center and the Center of Excellence for countering Hybrid Threats in Helsinki aims to provide a basis for a better understanding of the phenomena, and for developing analysis tools to detect and counter Hybrid Threats in an early phase.

KEYNOTE SPEAKERS

(da confermare)



Ahti Salo

Aalto University, Finland

Professor Doctor of Technology, Director of the Laboratory.

Professor Salo has worked extensively on the development of decision analytic methods and their uses in resource allocation, innovation management, risk management, technology foresight, and efficiency analysis. He has published widely in leading international journals (including Management Science and Operations Research) and received awards for his research from the Decision Analysis Society of the Institute for Operations Research and the Management Sciences (INFORMS). He serves on the Editorial Boards of several refereed journals.

Professor Salo has directed a broad range of basic and applied research projects funded by leading industrial firms, industrial federations, and funding agencies. He has been visiting professor at the London Business School, Université Paris-Dauphine and the University of Vienna. He has been the President of the Finnish Operations Research Society (FORS) for two biennial terms. In 2010-11, he served as the European and Middle East representative of the International Activities Committee of INFORMS. In 2010-16, he was jury member of the EDDA Doctoral Dissertation Award of the Association of European Operational Research Societies (EURO), and chaired this jury in 2016. He has been on the Board of the Association of Parliament Members and Researchers (Tutkas) since 1999.

Using Portfolio Decision Analysis to Build Improved Strategies for Safety and Reliability

At present, trends such as the wider adoption of sensors, communication devices and data science tools make it possible to develop increasingly accurate representations of techno-economic systems and their safety performance. Together with methodological advances in portfolio decision analysis, such representations support the formulation of increasingly comprehensive decision models which are systemic in that they account simultaneously for multiple objectives and associated preferences; the full range of alternative risk mitigation actions; logical and probabilistic dependencies within the system; as well as relevant resource and risk constraints, including budgets and regulatory requirements.

In this talk, we show how these kinds of systemic decision models can be developed and transformed into optimization problems which can be solved with tailored knapsack algorithms or techniques of mixed integer linear programming (MILP). A major benefit of these models is that they recommend portfolios of risk mitigation actions which are guaranteed to be optimal in view of the stated constraints: thus, these actions will, as a rule, contribute more to the chosen objectives (such as safety performance) than selecting actions one-by-one based on “piecemeal” approaches such as the comparison of individual risk importance measures or benefit-to-cost ratios. Furthermore, these models can capture many kinds of probabilistic and chance constraints (such as conditional Value-at-Risk) while they also help identify which actions are robust selections subject to different assumptions about the numerical values of model parameters. Several examples are given to illustrate how these advances in portfolio decision analysis provide information that serves to improve decisions.

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George Apostolakis (Usa)

George Apostolakis is the Head of the Nuclear Risk Research Center in Japan. He is a professor emeritus of the Nuclear Science and Engineering Department of the Massachusetts Institute of Technology. He is a Senior Fellow of the Garrick Institute for Risk Sciences at UCLA. He served as a Commissioner of the U.S. Nuclear Regulatory Commission (NRC) from April 23, 2010 until June 30, 2014. From 1995 until 2010, he was a member and Chairman (2001-2002) of the statutory Advisory Committee on Reactor Safeguards of the NRC. He is a member of the U.S. National Academy of Engineering and a Fellow of the American Nuclear Society and the Society for Risk Analysis. He is the recipient of the Henry DeWolf Smyth Nuclear Statesman Award from the American Nuclear Society and the Nuclear Energy Institute.

He is the founder of the PSAM conferences.



Carlos Guedes Soares (Portugal)

Carlos Guedes Soares is a Distinguished Professor of the Engineering Faculty (Instituto Superior Técnico) of the University of Lisbon and the Head of the Centre for Marine Technology and Ocean Engineering (CENTEC), which is a research centre of the University of Lisbon that is recognized and funded by the Portuguese Foundation for Science and Technology. He received the MSc. and Ocean Engineer degrees from the Massachusetts Institute of Technology, USA in 1976, the Ph.D. degree from the Norwegian Institute of Technology of the University of Trondheim, in 1984, and the Doctor of Science degree from the Technical University of Lisbon, Portugal, in 1991. He has supervised more than 50 PhD students and has co-authored more than 700 journal papers and several more in Conferences. He has a Web of Science h-index of 51 and more than 13,000 citations. He has been publishing in probabilistic modelling, uncertainty analysis, risk analysis and structural reliability. He is one of the 5 Founding Members of the European Safety and Reliability Association (ESRA), and has been General Secretary, Vice-Chairman and Chairman of ESRA, and is now the Editor of the ESRA Newsletter. He has been coordinating the Symposium on Structures, Safety and Reliability of the Ocean, Offshore and Arctic Engineering (OMAE) Conference since 1989 and has been Chair or Co-Chair of various conferences in the series of OMAE, ESREL, IMAM, MARSTRUCT, MARTECH and RENEW Conferences. He has been Editor (now Editor-in-Chief) of the Reliability Engineering and System Safety Journal (RESS) since 1992 and he belongs to the Editorial board of about 15 Journals. He is a Fellow of ASME, SNAME, RINA, IMarEST, Ordem dos Engenheiros and a Member of the Portuguese Academy of Engineering.



Melinda Hodkiewicz (Australia)

Melinda Hodkiewicz is an engineering academic working on multi-disciplinary projects to improve maintenance, asset management and safety practices. Her academic career started in 2005 after an earlier engineering career in maintenance in the resources industry. She currently has a 5-year A\$1.3M Fellowship at the University of Western Australia funded by BHP, a major resources company. The aim of the Fellowship is to improve academic-industry collaboration and work to support the communities in which BHP operates. She endeavours to do the latter by research that impacts maintenance to make it more productive and safer. In October 2019 she has been elected a Fellow of the Australian Academy of Technology and Engineering.

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In October 2019 she has been elected a Fellow of the Australian Academy of Technology and Engineering.

Professor Hodkiewicz is an international leader in asset management through research, education and digitalization.



Paola Girdinio (Italy)

President of the National Network of Cyber Security Electricity Networks and Full Professor of Electrotechnics at the Faculty of Engineering of the University of Genoa, where he was previously Faculty Dean.

She is also a Director of ENEL and of the Costa Crociere Foundation. He previously held the same position at Ansaldo STS, Banca Carige, Ansaldo Energia, D'Appolonia (RINA Group) and the University of Genoa.

She is also a member of the scientific committee of the Eurispes Security Observatory and was selected in 2018 European awards short list BCI.

For her commitment in the academic and professional field she has been included in the list of experts in technological innovation established by the Ministry of Economic Development.



Rui Kang (China)

Rui Kang received his bachelor's and master's degree in Electrical Engineering in 1987 and 1990 from Beijing University of Aeronautics and Astronautics (BUAA, Beijing, China), respectively. Now he is Distinguished Professor in School of Reliability and Systems Engineering and Chief Engineer in Reliability Engineering Institute of Beihang University (the original name is BUAA). He is Director of Center for Resilience and Safety of Critical Infrastructure (CRESCI) and Sino-French Risk Science and Engineering Lab. He is the Chairman of the academic committee of National Key Laboratory for Reliability and Environment Engineering Technology. He is the founder of Belief Reliability Theory. His main research interests include reliability and resilience for critical infrastructures, system prognosis and health management. He published eight books and more than 200 papers. He received several awards from the China government for his outstanding scientific contributions such as Chang Jiang Scholars Program of Ministry of Education of China and China's National Science and Technology Advancement Prizes.



Shaoping Wang (China)

Wang Shaoping (1966–) is a professor and PhD supervisor as well as Deputy Dean of the School of Automation Science and Electrical Engineering, Beihang University. She is a distinguished professor of the Chang Jiang Scholars Program. She is also the director of the Reliability Branch of Operations Research Society of China, and vice-chairman of Society of Capital Women Professors. She was a guest professor at Purdue University, Ecoles Centrales, SMC Research Center in Japan.

Shaoping Wang's research interests are in the area of fault diagnosis and health management, reliability and fault tolerant control, fluid power transmission and control, mechatronic control and simulation, design and optimization of mechatronic system, and big data precision medicine.

Prof. Shaoping Wang had published more than 5 books and 300 papers in journals and international conference, in which more than 200 papers are indexed by SCI/EI.



Way Kuo (Hong Kong)

Way Kuo is President of City University of Hong Kong. He is a Member of US National Academy of Engineering and Academia Sinica in Taiwan, a Foreign Member of Chinese Academy of Engineering and Russian Academy of Engineering. Professor Kuo specializes in design for reliability of electronics and energy systems. He is the author and co-author of eight academic books and over 200 high impact papers.

His first popular science book *Critical Reflections on Nuclear and Renewable Energy* has created an impact since its publication in 2013 in Taiwan. The book has been translated into English, Japanese, French and Russian and published in Massachusetts, Tokyo, Paris, and Moscow, respectively. His new book on higher education, *The American Way in China's Higher Education*, has been jointly published by Wiley-Scrivener in May 2019.

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Jean-Paul Chabard (France)

Scientific Director

EDF Research and Development Division

Graduated from the Ecole Centrale de Paris, Jean-Paul Chabard spent his entire career with the Research and Development of EDF which he joined in 1984 as a researcher in computational fluid dynamics. He successively headed the National Hydraulics Laboratory, the Department Thermal Transfer and Aerodynamics and the Service Modeling and Information Technology. More recently, he has held various positions within the management team of EDF R&D including a position as Finance Director and next Director of the Saclay Project and French Academic Partnerships. In this position, he was responsible for the installation of a new research center of EDF on the Paris-Saclay Campus and for the development of collaborations with French Academic Institutions. From April 2015, he is now Scientific Director of the EDF Research and Development.

Jean-Paul Chabard has held various teaching activities. He is currently Professor of Aerodynamics and Thermal Transfer at the Ecole des Ponts ParisTech.

Also very involved in scientific societies, he is Honorary Member of the International Association for Hydro-Environment Engineering and Research (IAHR). He served in different positions in this association and he was during 8 years Vice President of the association (2001-2005 and 2009-2013). He is also member of the Board of the Société Hydrotechnique de France (SHF). He was awarded the Seymour CRAY award for numerical simulation in 1988 and the “Grand Prix de l’ Hydrotechnique” by the Société Hydrotechnique de France in 2006.



Vera Lucia Fernandes de Paiva da Silva (Portugal)

Chief Technology Officer

General Electric Grid Solutions

Portuguese engineer and chief technology officer (CTO) at General Electric (GE) grid solutions part of GE Renewable Energy business. She is one of the few women to hold a chief technology officer position at General Electric. She works on electricity grids technology and renewable energy integration.

As a child Silva visited a large hydro power plant and this sparked her interest for electricity systems. Silva studied electrical engineering and computer science at the University of Porto. She earned a bachelor’s degree in 1999 and a master’s degree in 2003 both in electrical engineering. She moved to the United Kingdom for her doctoral studies, earning a PhD in the electrical and electronics engineering in 2010. Her PhD investigated the value of flexibility in systems that use wind power and was supervised by Goran Strbac. She worked as a lecturer and data scientist at the Polytechnic Institute of Porto. After completing her doctorate, Silva joined EDF R&D in France, where she directed their program on Energy Systems and Markets. As of 2019 Silva is the chief technology officer at General Electric grid solutions, where she leads 3,400 engineers around the world. She is one of the few women to be made technology leader. At General Electric, Silva works on new electricity grid technology. She believes the future will involve more sustainable and flexible technologies, integrating microgrids and high voltage direct current (DC) transmission lines. She is pushing for utilities operators to find it easier to integrate renewables in homes.



Pierre-Alain Graf (Switzerland)

Member of the board

World Economic Forum

Resilient, international CEO in telecommunication businesses, power infrastructures and high tech industries with P & L responsibility. Successful in strategy creation and implementation. Strong track record in transforming organizations and successful government and private stakeholder management. Passion for sales and growing businesses. Used to leading very large and complex M&A projects. Strength in cross-cultural team building; talented communicator and strong negotiator (Sweden and Nordic Countries, UK, US, France, Germany, Switzerland). Bridges technologies with finance, business with politics and strategy with execution.

Pierre-Alain Graf is on the board of Leclanché SA, Landis+Gyr Group AG and Broadband Networks AG and Owner at Pag Consulting & Services GmbH. In his past career Mr. Graf held the position of Chief Executive Officer for Swissgrid AG and General Manager of Cisco Systems (Switzerland) Investments Ltd.

Mr. Graf received a graduate degree from the University of Basel and an MBA from the University of St. Gallen.

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June 21-26, 2020 **Venice** - Italy

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Expo Tech: the World exposition of technical and scientific methods and solutions for the reliability of complex systems, safety of critical infrastructures, prevention and management of risk

Reliability, safety and security for a truly sustainable world

It is now time to submit the abstract of your paper for consideration in the 30th European Safety and Reliability Conference (ESREL 2020) and the 15th Probabilistic Safety Assessment and Management Conference (PSAM 15) that will be held in Venice, Italy, on June 21-26, 2020.

This Conference takes place only every eight years (Crete 1996, Berlin 2004, Helsinki 2012, and next Venice 2020) and brings together the top experts of the World in the science and practice of reliability and safety. It is a unique opportunity to advance knowledge in the fields of reliability and safety, by sharing achievements and challenges. It provides a forum where to strengthen the multidisciplinary network of competent professionals, which is needed to face today's challenges in our rapidly evolving "risky" World: come to make it safer.

Each abstract (and paper) will be evaluated for acceptance by peer reviewers. Abstract-only presentations (no paper needed) are also accepted. As customary, paid registration to the Conference is mandatory for abstract/paper acceptance (one registration per abstract/paper).

The publication of the full set of accepted papers will be referenced by SCOPUS, EI COMPENDEX and THOMSON REUTERS (ISI Web of Knowledge, Conference proceedings) citation indexes. Publication of selected works in special issues of indexed scientific journals will also be pursued.

Important Dates

2019

- **November 10:**
Abstract Submission
- **December 5:**
Abstract Acceptance

2020

- **January 15:**
Full Paper Submission
- **March 1:**
Notification of Acceptance
- **March 15:**
Final revised full paper submission and early-bird registration deadline

General Chair:

Enrico Zio

CRC - Centre de recherche sur les Risques et les Crises, Mines ParisTech, Sophia Antipolis, France and Energy Department, Politecnico di Milano, Italy Eminent scholar at Kyung Hee University, Republic of Korea

Distinguished guest professor at Tsinghua University, China Adjoint Professor at Beihang University, City University of Hong Kong and Wuhan University, China

Co-Director of the Center for RELiability and Safety of Critical Infrastructures (CRESCI) and the Risk Science and Engineering (RISE) laboratory at Beihang University, China

General co-Chair:

Terje Aven

SEROS - Centre for Risk Management and Societal Safety, Faculty of Science and Technology, University of Stavanger, Norway

Technical Program Chairs:

Piero Baraldi

Energy Department, Politecnico di Milano, Italy

Francesco Di Maio

Energy Department, Politecnico di Milano, Italy

Technical Program co-Chair:

Johan Sörman

Lloyd's Register, Stockholm, Sweden



ESREL 2020 PSAM 15
VENICE - ITALY

Main Conference Topics

Accelerated Degradation and Life Tests

Accident and Incident Modeling

Artificial Intelligence for Reliability, Maintenance and Safety

Augmented Reality for Safety

Big Data and IoT Applications in Reliability and Maintenance

Computational Reliability/Risk Assessment

Consequence Modeling and Management

Crisis Management

Cyber Security

Dependability

Dependence and Common Cause Failures Modeling and Analysis

Disaster Management

Dynamic Reliability/Risk Assessment

Economic Analysis in Risk Management

Environmental Risk Analysis

External Hazards Risk Assessment

Foundational Issues in Risk Assessment and Management

Geologic Risk Assessment

Human Factors and Human Reliability

Industrial Safety

Industry 4.0 Reliability and Safety

Insurance Risk

Internal Hazards Risk Assessment

Machine Learning for Reliability, Maintenance and Safety

Maintenance Modeling and Applications

Mathematical Models and Methods for Reliability and Safety

Medical Risk

Natural Hazards Risk Assessment

Occupational Safety

Optimization of Reliability, Maintenance and Safety

Organizational Factors

Policy Making and Legislative Issues

Predictive Maintenance

Prognostics and System Health Management

Quality

Resilience Analysis, Assessment and Management

Risk Acceptance Criteria

Risk Analysis and Safety in Standardization

Risk Assessment

Risk Governance and Societal Safety

Risk Informed Applications

Risk Management

Risk Perception and Communication

Risk Prevention

Risk-based Decision Making

Safety Culture

Security

Site Level Multi-Unit Multi-Source Risk Assessment

Smart Devices and Systems Reliability

Software Reliability and Safety

Structural Health Management

Structural Reliability

System Reliability

Uncertainty and Sensitivity Analysis

Virtual Reality for Safety

Web Security

Main Industrial Areas

Aeronautics and Aerospace Industry

Agriculture and Aquaculture Systems

Automotive Industry

Autonomous Transportation

Banking and Finance

Chemical and Process Industry

Civil Engineering

Critical Infrastructures

Cyber-Physical Systems

Data Centers

Electric Power Industry

Electronics

Energy Industry

Food Industry

Health and Medicine

Health Service Industry

Information Technology and Telecommunications

Insurance

Land Transportation

Land Use Planning

Manufacturing

Maritime and Offshore Technology

Materials

Nuclear Industry

Oil and Gas Industry

Railways Industry

Renewable Energy Industry

Smart Cities and Systems

Socio-Technical-Economic Systems

Supply Chains

Water Transportation Systems

Web Systems

Conference Associations:



Conference Organizer:



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ESREL 2020 PSAM 15
VENICE - ITALY

CONFERENCE VENUE



EXPOTECH
ESREL 2020 PSAM 15
VENICE - ITALY

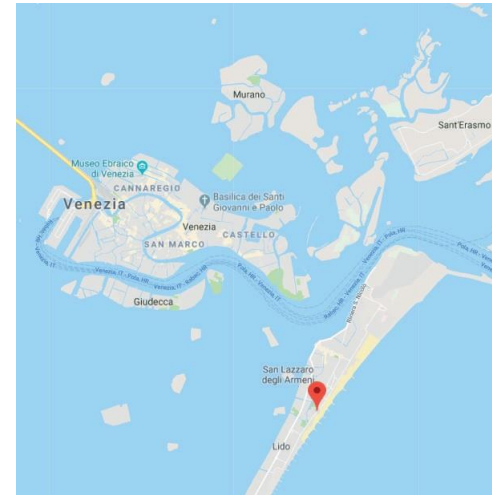
VENEZIA

Parte del mistero e del fascino di Venezia è che questa incantevole città lagunare è rimasta intatta e immutata per molti secoli. Con i suoi vicoli magici, ponti romantici e cupole dorate, Venezia sembra letteralmente sorgere dalle acque.



ENEZIA LIDO

EXPOTECH ESREL 2020 PSAM15 si svolgerà a **Venezia Lido**, presso il Palazzo del Cinema e Palazzo del Casinò (Centro Congressi Venezia Lido). L'isola di Lido, proprio di fronte a San Marco, è famosa per le sue spiagge tranquille e l'architettura «belle époque». È l'isola più lunga della Laguna e l'unica dove sono ammesse auto e biciclette.



Lungomare Guglielmo
Marconi Lido di Venezia,
Venice, Italy



PALAZZO DEL CINEMA

Il Palazzo del Cinema è la sede principale della Mostra Internazionale del Cinema di Venezia. Costruito in tempo record nello stile modernista dell'epoca, fu inaugurato il 10 agosto 1937 per la quinta edizione del Festival. Rispetto alla monumentalità retorica del vicino Palazzo del Casinò, il Palazzo del Cinema, che dispone di una sala e di un teatro a 1032 posti, è una sintesi di modelli «razionalisti.»



PALAZZO DEL CASINÒ

L'edificio monumentale del Palazzo del Casinò fu progettato dall'ingegnere capo del Comune di Venezia Eugenio Miozzi in stile razionalista, influenzato dall'architettura fascista degli anni '30 e costruito nel periodo record di 8 mesi nel 1938. Rispetto all'austera facciata rivestita in travertino, gli interni del Palazzo presentavano su ogni piano spazi decorati con marmi, mosaici e vetri artistici delle migliori serre di Murano, designati come sale da gioco d'azzardo, sale da pranzo e caffè, e per le aree di intrattenimento.

Il Casinò è stato chiuso alla fine degli anni '90, e da allora il Palazzo è stato utilizzato dalla Biennale per la Mostra Internazionale del Cinema di Venezia.



VENICE, 21/26 JUNE 2020 PALAZZO DEL CINEMA



Vi aspettiamo

per info:

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