

A CIMNE Workshop in cooperation with CAE

International Thematic Workshop with Joint Europe-China Sessions “Meeting the Challenges towards a Climate Neutral Aviation”

CIMNE/UPC, Barcelona, 22 – 24 November 2022

This Workshop is dedicated to the 80th anniversary of Jacques Periaux, CIMNE

With concurrent sessions in Nanjing hosted by NUAA, China

Draft Programme

Day 1	Tuesday	November 22, 2022
On-site Session 1 hosted by CIMNE (Barcelona, Spain)		
Europe Time	China Time	Content
13:30	20:30	On-site Registration
15:00	22:00	Local Opening by the Host and Welcome Address of the On-site Sessions
		Chairperson: Jacques Periaux, CIMNE/UPC, Spain
		Gabriel Bugada, CIMNE/UPC, Spain Welcome Address and Introduction in the Workshop
		Dietrich Knoerzer, Aeronautics Consultant, Brussels "Technology Needs for Future Civil Aviation - An Overview"
16:00	23:00	Session and Discussion on Technology Needs and Opportunities for Sustainable Aviation Research in the EU Framework Programmes for Research & Innovation
		Chairperson: Dietrich Knoerzer, Aeronautics Consultant, Brussels "Technology Needs for Future Civil Aviation - An Overview"
16:00	23:00	Coffee Break
16:30	23:30	Discussion of Roundtable 1: Moderator: Dietrich Knoerzer, Aeronautics Consultant, Brussels
17:15	0:15	End of On-site Session 1
17:30	0:30	Workshop Welcome Drink – End of Day 1
Day 2	Wednesday	November 23, 2022
On-site Meeting hosted by CAE (NUAA, Nanjing, China)		
Europe Time	China Time	Content
1:30	8:30	On-site Registration
2:30	9:30	On-site Meeting hosted by CAE
		Chairperson: BAI Wen, CAE, China
		Technical sessions
		Thematic discussions
5:00	12:00	End of On-site Meeting

Joint Europe-China Session 1 (Hybrid - On-site and Online)

8:00	15:00	<p>Welcome Addresses and Keynote Session</p> <p style="text-align: center;">Chairpersons: Gabriel Bugada, CIMNE/UPC, Spain SUN Xiaoheng, CSAE, China ZHAO Ning, NUAA, China</p>
		<p>Welcome Addresses by the Hosts</p> <p style="text-align: center;">Javier Bonet, Director General CIMNE</p> <p style="text-align: center;">JIANG Bin, Deputy-President of NUAA, China</p>
		<p>Welcome Keynotes</p> <p style="text-align: center;">SHI Ling, Director of Europe Division, Department of International Cooperation, MOST (on-line)</p> <p style="text-align: center;">Vojko Bratina, International Relations Officer, EU Delegation in China</p>
		<p>Keynote Speeches</p> <p style="text-align: center;">Eugenio Oñate, Vice-President of CIMNE, Spain "A Physics-Informed Data-Driven Approach for the Simulation of Turbulent Fluid Flows"</p> <p style="text-align: center;">SUN Xiasheng, CSAE, China "China-EU Aeronautic S&T Co-Operation: History and Future"</p>
9:00	16:00	<p>Keynote Lectures</p> <p style="text-align: center;">Chairpersons: Jacques Periaux, CIMNE/UPC, Spain WU Ximing, CAE, China</p> <p style="text-align: center;">LIN Dakai, COMAC, China "Drag and Noise Reduction Technologies for Future Civil Aircraft"</p> <p style="text-align: center;">Eric Maury, Airbus, France "Technologies Accelerating the Climate Neutral Transformation in Aviation"</p>
9:40	16:40	Coffee Break
10:10	17:10	<p>Scientific Lecture Session (Invited Lecturers)</p> <p style="text-align: center;">Chairpersons: Jacques Periaux, CIMNE/UPC, Spain ZHAO Ning, BUAA, China</p> <p style="text-align: center;">Jos Vankan, NLR, The Netherlands "Hybrid-Electric Propulsion Concept Design for Short-Medium Range Aircraft"</p> <p style="text-align: center;">WU Ximing, CAE, China "A Perspective of High Speed Rotor Aircraft for China Civil Air Transport"</p> <p style="text-align: center;">Shuai Li, Chalmers University, Sweden "On the Improvement of Acoustic Models for Aerodynamic Noise Prediction Using Physics-Informed Machine Learning"</p> <p style="text-align: center;">JI Yuhan, ADR/CAE, China "China's New Energy Aviation Roadmap under Carbon Peeking and Carbon Neutrality Goals"</p>
11:10	18:10	<p>Ceremony for Jacques Periaux's 80th Anniversary</p> <p style="text-align: center;">Chairpersons: Pedro Diez, CIMNE, Spain WU Yizhao, NUAA, China</p> <p style="text-align: center;">Memory Video from China partners</p>

		Olivier Pironneau, Université Pierre et Marie Curie, France "Jacques Periaux's Achievements for Industry/University Partnerships"
		TANG Zhili, NUAA, China "Jacques Periaux's S&T Contributions for Aeronautics" (15 minutes)
		Dietrich Knoerzer, Brussels, Belgium "33 Years for European Research Cooperation in Aeronautics" Gabriel Bugada, CIMNE/UPC, Spain "The Creation, Development and Operation of a EU-China Network in Aeronautics (2005 – 2020)"
		Gift for Jacques Periaux presented by SUN Xiasheng, CSAE, China
		Jacques Periaux, CIMNE/UPC, Spain "Some Comments on 30 years of progress in Design Optimization Methods with Evolutionary Algorithms, Game Strategies and Finite Elements. Related applications in Aeronautics "
12:30	19:30	End of Joint Europe-China Session 1
12:40	19:40	Workshop Dinner in Nanjing, China
On-site Session 2 hosted by CIMNE (Barcelona, Spain)		
13:00	20:00	Lunch
14:15	21:15	Session on Investigations into the Impact of Aviation Non-CO2-Emissions on Climate Change in International Cooperation
		Chairperson: Gabriel Bugada, CIMNE/UPC, Spain
		Introductory Lecture: Manuel Soler, Universidad Carlos III, Spain "Aviation and Climate Change: Quantifying the Cost of the Aviation-Induced Climate Mitigation Potential via Aircraft Trajectory Optimization"
		Olivier Pironneau, Université Pierre et Marie Curie, France "Matrix Compression for an efficient Radiative Transfer Solver: Application to Contrails in the high Atmosphere"
15:00	22:00	Coffee Break
15:30	22:30	Roundtable 2: Prospective Discussion about Opportunities in Impact of Aviation Non-CO2-Emissions on Climate Change in International Cooperation
17:00	0:00	End of On-site Session 2
20:30	3:30	Workshop Dinner in Barcelona, Spain
Day 3 Thursday November 24, 2022		
On-site Workshop hosted by ACTRI/AVIC, Nanjing, China		
Europe Time	China Time	Content
2:00	9:00	On-site Workshop hosted by ACTRI/AVIC
		Chairperson: LI Li, ACTRI/AVIC, China
		Digital Design, Manufacturing & Services
		Model Based System Engineering (MBSE)
		Artificial Intelligence (AI)

		Quantum Technologies
5:00	12:00	End of On-site Workshop, Nanjing, China
Joint Europe-China Session 2 (Hybrid - On-site and Online)		
8:00	15:00	Joint Hybrid Scientific Session 1/2
		Chairpersons: Jordi Pons-Prats, CIMNE/UPC, Spain ZHENG Yao, Zhejiang Univ., Hangzhou, China
		Esteban Ferrer, UPM, Spain "New Avenues in Computational Fluid Dynamics"
		ZHAO Yifei, Civil Aviation Univ. of China - CAUC, Tianjin, China "Green Operation Technology of Civil Transportation"
		Ramon Codina, CIMNE/UPC, Spain "Hybrid Intrusive/ML-Based Reduced Order Model for the Optimisation of Aerodynamic Profiles"
		YI Xiaosu, University of Nottingham Ningbo, China "Green Materials and Green Functional Structure for Green Aviation"
9:20	16:20	Coffee Break
9:50	16:50	Joint Hybrid Scientific Session 2/2
		Chairpersons: Dietrich Knoerzer, Brussels, Belgium ZHAO Yifei, CAUC, China
		Domenico Quagliarella, CIRA, Italy "Risk Measures for Robust Optimization and their Efficient Use in Aerodynamic Shape Design"
		ZHENG Yao, Zhejiang Univ., Hangzhou, China "Current Status and Challenges of Adopting New Energy Systems for Aviation Emission Reduction"
		Nico Gauger, TU Kaiserslautern, Germany "Groundbreaking Designs Through Innovative Combination of Methods from Artificial Intelligence and Optimization"
		HAN Zhonghua, North-West Politechn. Univ., Xi'an, China "Efficient Global Optimization Method for Aerodynamic and Multidisciplinary Design"
11:10	18:10	Closing remarks from Europe and China
		Speakers: Gabriel Bugada & Jacques Periaux, CIMNE/UPC, Spain BAI Wen, CAE, China
11:40	18:40	End of Joint EU-China Session 2
On-site Session 3 hosted by CIMNE (Barcelona, Spain)		
12:30	19:30	Lunch
14:00	21:00	Closing Roundtable 3: Prospective Discussion about Opportunities about the Goal of Climate Neutral Aviation - Advanced Design Tools
		Chairperson: Jacques Periaux, CIMNE/UPC, Spain
15:00	22:00	End of On-site Session 3 and Closing Remarks by CIMNE
12:00	19:00	Special Dinner
13:50	20:50	On-site Closing Session, Nanjing, China
		Chairperson: LI Xiaofei, CAE, China

		Final panel discussion
		Closing remarks by CAE
14:50	21:50	End of the On-site Workshop