

8TH EDITION OF THE SPACE PROPULSION CONFERENCE

CALL FOR PAPERS

DEADLINE EXTENDED

SPACE PROPULSION 2022

09-13 MAY 2022
ESTORIL • PORTUGAL

WWW.3AF-SPACEPROPULSION.COM

ABSTRACT DEADLINE
15 NOVEMBER 2021



Following seven editions of growing success, 3AF - Association Aéronautique et Astronautique de France, and Agencies, ESA, CNES, DLR and ASI are pleased to announce:

SPACE PROPULSION 2022

The eighth of a series of international conferences on technical and programmatic aspects related to the development and application of Space Propulsion technologies.

During this edition, plenary roundtables will bring a specific focus on **Space As a Service for new applications**.

The SPACE PROPULSION Conference is **the international forum supporting the preparation of future activities and roadmaps in all the fields of space propulsion**. As previous edition, EUCASS joins 3AF to organize a prospective session: «In orbit Refueling challenges and solutions».

The programme of the event highlights programmatic and technical issues and promotes exchange of views and information in the two main areas of propulsion for spacecraft and for space transportation.

More than 700 professionals from over 30 countries are expected, gathering engineers and scientists from government, university and industry.

This event is a unique opportunity to discover innovative solutions and implement fruitful exchanges between colleagues of different countries and disciplines.

SPACE PROPULSION 2022 will be organized around

- **An opening day dedicated to plenary sessions and round tables** during which agencies' general directors, industry, integrators and equipment manufacturers will be invited to speak;
- **Up to 4 days dedicated to technical presentations and plenary sessions**;
- **A hall reserved to sponsors and exhibitors** to showcase their know-how and innovation and spotlight technical results, technologies and research. For optimum visibility during the event, this exhibition space is situated at the heart of the conference centre;

WELCOME TO THE SPACE PROPULSION 2022 CONFERENCE !

J. MANSOURI, D. RIBEREAU & G. SACCOCCIA
Conference Chairs

WWW.3AF-SPACEPROPULSION.COM

FLASHBACK ON THE LAST EDITION

In 2021, the SPACE PROPULSION Conference was organised in a virtual mode, due to COVID pandemic situation.

In 2021, The SPACE PROPULSION CONFERENCE gathered near 460 participants from 33 countries, totalling 54 technical sessions and about 380 presentations.

This achievement was possible thanks to the participation of a large number of top-ranking delegates from the international sector (Head of Agencies, Space Operators, Industry CEOs), European and International Agencies and Industry support and to a great number of high quality papers presented throughout the event.



SPACECRAFT PROPULSION

For the area of application to spacecraft, Space Propulsion 2022 is soliciting abstracts on the following subjects:

- Chemical spacecraft propulsion systems
- Electrical spacecraft propulsion systems
- Advanced spacecraft propulsion systems
- Propulsion components
- Integrated & miniaturised modules or sub assemblies
- Production, manufacturing, material & processes
- Development and qualification programs
- Overview of current programmes (requirements, roadmaps, solutions)
- AIV issues and tools (facilities diagnostics, methodologies)
- Flight testing and experience (operations, lessons learned, feedback from in flight failure and anomalies, satellite passivation and deorbiting strategies)
- Technology building blocks for future spacecraft propulsion systems including exploration
- Green Propulsion & New Propellants for spacecraft (ongoing programmes and applications, R&D)
- Rocket propulsion & global environment (REACH, impact of new regulations)
- Cost-related aspects of spacecraft propulsion
- Flow and Systems Modelling (all propulsion systems design and performance evaluation)
- EP Thruster Plasma Modelling (inside thruster and interaction with s/c)
- Theoretical performance vs status of technology: how to push the limits (materials, design solutions, efficiency/specific weight, energy generation cycles, etc)
- Game changers (constellations, small sats, private initiatives, additive manufacturing use...)
- Reusability
- LEAN principles applied in Space Propulsion (low volume)
- Synergies between spacecraft and launcher propulsion developments

SPACECRAFT PROPULSION TECHNICAL COMMITTEE

ANDRENUCCI	Mariano	SITAE	GARBAYO	Alberto	AVS UK	PONS LORENTE	Arnau	Purdue University
ANTHOINE	Jérôme	ONERA	HÄSSLER	Stefan	ArianeGroup	POPOV	Garri	RIAME
CASSADY	Joe	AEROJET	KOGA	Shohei	IHI Aerospace	PÜTTMANN	Norbert	DLR
COLETTI	Michele	TAS-UK	KREJCI	David	Enpulsion	ROSSI	Alberto	CNES
COXHILL	Ian	MOOG	LAWRIE	Alan	Airbus	SACCOCCIA	Giorgio	ASI
DEMAIRÉ	Alain	OHB Sweden AB	MANFLETTI	Chiara	ESA	SCHMIDT	George	NASA
DINGERTZ	Wilhelm	BRADFORD SPACE	MANSOURI	Jamila	ESA	SHIMADA	Toru	Jaxa
DUCHÉMIN	Olivier	Safran Aircraft Engines	MASUDA	Ideo	JAXA	VAUDOLON	Julien	Safran Aircraft Engines Exotrail
FORD	Mark	ESA	PACKAN	Denis	ONERA	ZUCKERMAN	Zvika	Rafael
FORMARO	Roberto	ASI	PEUKERT	Markus	OHB System AG			
GONZALEZ DEL AMO	Jose	ESA	POLK	James E.	Jet Propulsion Laboratory			

PROPULSION FOR SPACE TRANSPORTATION

For the area of application to space transportation systems, Space Propulsion 2022 is soliciting abstracts on the following subjects (some topics include a non-exhaustive list of more detailed themes as guidance for abstract submission):

- Propulsion sub-systems and components (turbo machinery, thrust chambers, nozzles, LH2 fluid bearings, open impeller integration in turbo pumps, etc)
- Production and manufacturing issues (large boosters, components, etc)
- Liquid, Solid, Hybrid, Gel and Air-breathing Propulsion Systems for Launcher and Upper Stages (full expander cycle vs expander bleed cycle: advantages and limits, rocket engine reliability estimation, composite casing experience and future evolutions, idle mode or high throttling mode of rocket engines)
- Overview of current programmes (requirements, roadmaps, solutions)
- AIV issues and tools (facilities diagnostics, methodologies, telemetry and other advance measurement techniques)
- Flight testing and experience (operations, lessons learned, feedback from in flight failure and anomalies, satellite passivation and deorbiting strategies)
- Technology building blocks for Future Space Transportation Propulsion Systems: Launchers, Exploration platforms & Space Tourism (cryogenic long term storage in space, fluid transfer, etc)
- Green Propulsion & New Propellants for Space Transportation (ongoing programmes and applications, R&D)
- Rocket propulsion & global environment (REACH, impact of new regulations, dismantling of unused SRMs)
- Low Cost Access to Space, including operation aspects
- Modelling (CFD & validation of cryogenic, liquid, solid, hybrid; application to rocket engines, fluid management in micro gravity, combustion instabilities etc)
- Pressure-Thrust oscillations issues (in-flight measurements, multi-physics coupling modelling, etc)
- Impact of new requirements and regulations on design (debris mitigation, REACH, ...)
- Health monitoring

SPECIAL TOPIC WITH EUCASS : In orbit refueling challenges and solutions

As a natural following of the previous theme "In situ resources utilization and Space Propulsion" addressed during SP2020+1, this topic "In orbit refueling" will highlight key elements for increasing sustainability, and for Moon and Mars exploration success.

PROPULSION FOR SPACE TRANSPORTATION TECHNICAL COMMITTEE

BETTI	Francesco	AVIO	HENRY	Stéphane	ArianeGroup	PREVOST	Lilian	CNES
BIANCHI	Sébastien	Air Liquide	MOSSOLOV	Serguei	Keldysh Centre	RIBERAU	Dominique	ArianeGroup
BOUAZIZ	Laurent	Arianespace	NARAYANAN	V.	LPSC/ISRO	SCHLECHTRIEM	Stefan	DLR
BOURY	Didier	ArianeGroup	OKITA	Koichi	Jaxa	SUDAKOV	Vladimir	NPO Energomash
BRETEAU	Jérôme	ESA	ONOFRI (Pr)	Marcello	University of Rome (Sapienza)	TALAMONI	Yann	ArianeGroup
CIEZKI	Helmut	DLR			ONERA	VALÈS	Marc	Dassault Aviation
D'AVERSA	Emanuela	ASI	ORDONNEAU	Gérard	ESA	VELANDER	Martin	GKN Aerospace
FUESER	André	ArianeGroup	ORTEGA	Guillermo	ESA	VIGIER	Gilles	3AF
GIRARD	Nathalie	CNES	PALMNÄS	Ulf	Palmnäs & co	ZHENG	Riheng	Chinese Society Astronautics (CSA)
HARA	Hidenori	MHI	PESSANA	Mario	TAS			
HENOUX	Jean-Christophe	ArianeGroup	PIGNIER	Gérald	ArianeGroup			

CONFERENCE SCHEDULE

Call for Papers Opening	30 June 2021
Deadline for Abstracts	15 November 2021
Notification of acceptance to authors	13 December 2021
Preliminary programme	01 February 2022

Online registration opening	01 February 2022
Deadline for papers and/or Confirmation of Participation	01 April 2022
SPACE PROPULSION 2022	09 - 13 MAY 2022

CALL FOR PAPERS

Advice to authors:

- The main purpose of the abstract is to give the Technical Committee information to assist them in selecting the papers to be presented at the conference.
- The selected papers will be presented in a 20 minutes speech at the conference.
- An abstract will be selected based on the importance and originality of the subject addressed, on its relevance to the conference theme, on the clarity of its expression.
- The abstract should be a "stand alone" summary that can be used in the compilation of abstracts.
- The abstract should be in English and no longer than 500 words.
- The abstract should summarize the main objectives of the paper to be presented and outline its conclusions.
- Work that has been presented elsewhere, and not updated, will be considered inappropriate.
- All abstracts should be submitted on www.3af-spacepropulsion.com

Notification of Acceptance/Refusal

The organizing committee will notify all authors of its decision by 13 December 2021. This notification will be accompanied by detailed instructions allowing authors to prepare and send their paper to the 3AF secretariat by 01 April 2022.

Please note that failure to comply with the deadline will entail not having the manuscript included in the conference proceedings.

Language

Please note that the official language for the conference will be English. All presentations and documents must be in English.

CONFERENCE VENUE

Space Propulsion 2022 will be held in the Estoril Congress Center, Portugal
Estoril Congress Center, Av. Amarel, 2765-192 Estoril, Portugal



ACCESS

Lisbon International Airport is called "Humberto Delgado" (LIS).

Lisbon Airport | 30 km from the Conference Centre/Hotel
(around 25 minutes with taxi).

Flight from:

• Paris	2:30	• Brussels	2:40
• Amsterdam	3:00	• London	2:30
• Berlin	3:25	• Rome	2:55

ACCOMMODATION

Early booking for the Conference is strongly recommended.

HOTELS CLOSE TO THE CONFERENCE VENUE IN ESTORIL

Selected hotels with negotiated price will be available on :
www.3af-spacepropulsion.com

HOTELS IN LISBON

You can find a list of certified hotels on the official websites:

- www.visitlisboa.com : "SLEEP" tab

- www.golisbon.com : "WHERE TO STAY" tab

Estoril Congress Center is reachable by urban train from "Lisboa – Cais do Sobre" station to "Estoril" train station (40 min trip, departure every 20 min)

More information on <http://cp.pt/passageiros/en>



STEERING COMMITTEE

Jamila **Mansouri** (ESA, The Netherlands)
Dominique **Ribereau** (ArianeGroup, France)
Giorgio **Saccoccia** (3AF, France)
Michel **Assouline** (3AF, France)

CONFERENCE SECRETARIAT

3AF • 6, rue de Galilée • 75016 Paris – France
Aude **Lurbe**
Phone: +33 (0)1 56 64 12 30
E-mail: sp2022@3af.fr
Web : www.3af-spacepropulsion.com

EXHIBITION

If you are interested in receiving the exhibition opportunities details, please contact :
Jennifer **Savina**
Mob : +33 (0)6 09 42 83 88
Email: sp2022.exhibition@3af.fr