



AERO THERMO
DYNAMICS &
DESIGN FOR
DEMISE

Chair: Dr. Cristina De Persis ESA TEC-MPA
Co-chair: Dr. Julien Annaloro CNES

Organizers:
Dr. Cristina De Persis ESA TEC-MPA
Dr. Julien Annaloro CNES
Dr. Louis Walpot ESA TEC-MPA
Orr Cohen ESA TEC-MPA

Our Warmest Welcome...



To the **AeroThermoDynamics** and **Design for Demise Workshop** of 2021!!



We are forced to have this workshop **virtually** due to the current health situation

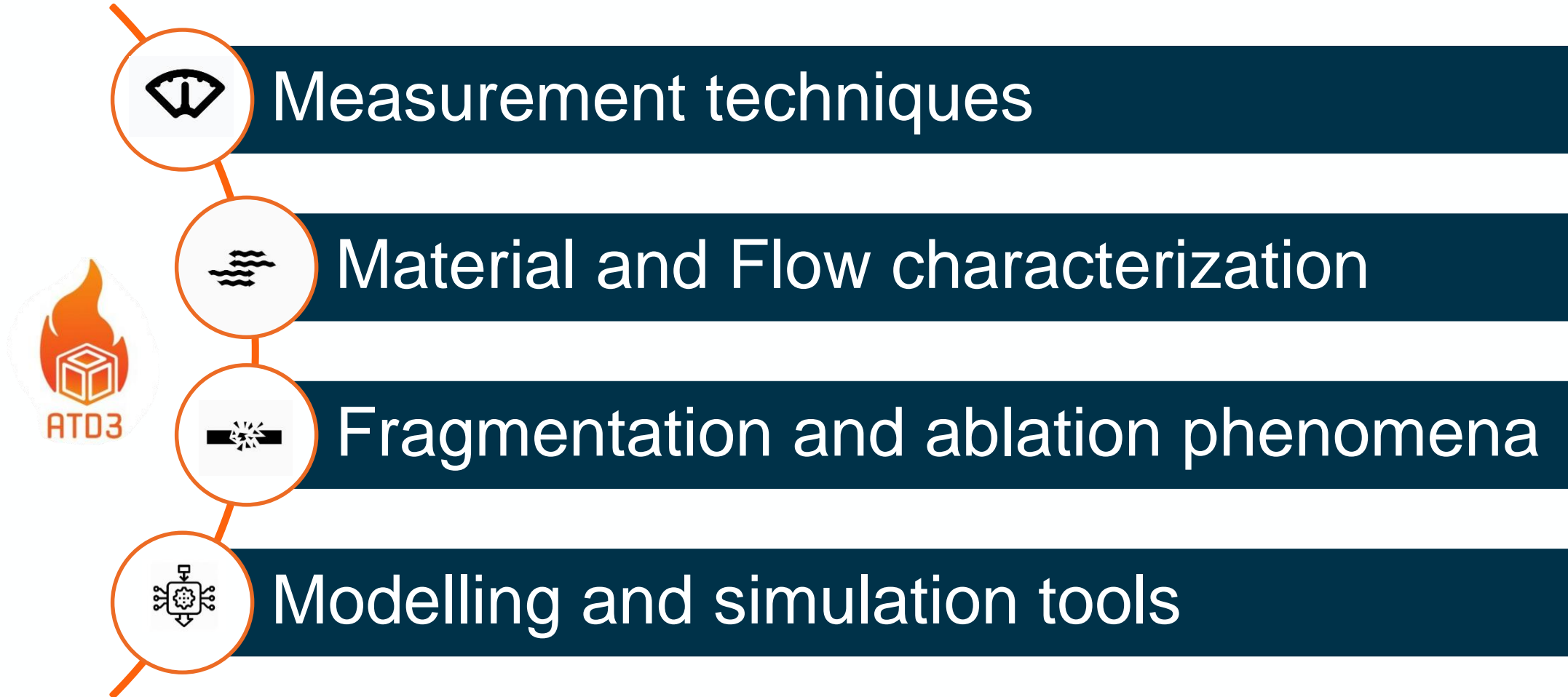


We have received this year:

- an impressive number of **high-quality contributions**
- more than **160 registration** from National Agencies, Industries, Research centers and Universities across Europe, Asia and US



I'm Cristina De Persis and I will be your host today, for any issue feel free to contact me



AM Agenda – All times are in CET



Welcome and Introduction	
Virtual Workshop	09:00 - 09:15
JAXA SCIENTIFIC RESEARCH: Spectroscopy of a blunted model in a superorbital expansion tube	Hideyuki Tanno
Virtual Workshop	09:15 - 09:40
ESA SCIENTIFIC RESEARCH: What to do when re-entry just isn't hot enough?	Geert Smet
Virtual Workshop	09:40 - 10:05
ESA GSTP ACTIVITY: Rebuild and data exploitation of the AVUM re-entry event for break-up model development	Dr Jérôme Dumon
Virtual Workshop	10:05 - 10:30
Q&A	
Virtual Workshop	10:30 - 10:40
Coffee break	
Virtual Workshop	10:40 - 10:55
ESA GSTP ACTIVITY: Demise of CFRP materials in atmospheric entry conditions	Dr Pierre Schrooyen
Virtual Workshop	10:55 - 11:20
ESA GSTP ACTIVITY: Advancements in demisability testing at VKI: Sub- and supersonic experiments of titanium, zerodur and quartz	Bernd Helber
Virtual Workshop	11:20 - 11:45
ACADEMIC SCIENTIFIC RESEARCH: GPU aided 2D high-enthalpy flow solver with state-to-state kinetics	Gianpiero Colonna
Virtual Workshop	11:45 - 12:10
INVITED SPEAKER - ACADEMIC SCIENTIFIC RESEARCH: Applying Ground Experiment Findings to the Simulation of Destructive Pressure Vessel Re-entry	Adam S. Pagan
Virtual Workshop	12:10 - 12:35
Q&A	
Virtual Workshop	12:35 - 12:45
Lunch break	



PM Agenda – All times are in CET



ESA GSTP ACTIVITY: Numerical and Experimental Validation of Spacecraft Demise during Atmospheric Re-entry <i>Virtual Workshop</i>	<i>Thomas Martinez</i> 13:45 - 14:10
ESA/ACADEMIC SCIENTIFIC RESEARCH: A multi-fidelity simulation framework for atmospheric re-entering bodies <i>Virtual Workshop</i>	<i>Fábio Morgado</i> 14:10 - 14:35
CNES ACTIVITY: R.Tech numerical simulation tools for debris modeling <i>Virtual Workshop</i>	<i>Martin Spel</i> 14:35 - 15:00
CNES ACTIVITY: Satellite re-entry uncertainty quantification and sensitivity analysis using object-oriented code DebrisK <i>Virtual Workshop</i>	<i>Pierre Van Hauwaert</i> 15:00 - 15:25
Q&A <i>Virtual Workshop</i>	15:25 - 15:35
Coffee break <i>Virtual Workshop</i>	15:35 - 15:50
ESA GSTP ACTIVITY: De-Risk of the Development of a High-Speed, High-Accuracy, Multi-Physics Propagator to be used in Design for Demise. <i>Virtual Workshop</i>	<i>Dr Michael Probyn-Skoufa</i> 15:50 - 16:10
INNOVATION & TECHNOLOGY: Demisable Pressure Vessels <i>Virtual Workshop</i>	<i>Dr Max Sardou</i> 16:10 - 16:35
ACADEMIC SCIENTIFIC RESEARCH: Measurement of the aerodynamic coefficients for basic shapes in the hypersonic flow regime <i>Virtual Workshop</i>	<i>Antonio Esposito</i> 16:35 - 17:00
INVITED SPEAKER - NASA SCIENTIFIC RESEARCH: Challenges in Modeling Hollow Objects in the Transition Flow Regime <i>Virtual Workshop</i>	<i>Christopher L. Ostrom</i> 17:00 - 17:25
Q&A <i>Virtual Workshop</i>	17:25 - 17:45
Greetings and Conclusions <i>Virtual Workshop</i>	17:45 - 18:00



The Virtual Event Etiquette. Few rules before starting..



This Workshop will be recorded, with your consent. Please send me a mail if you do not agree with this. Slides and abstracts will be made available to all the participants.

Please do not record and do not take screenshot.



You will be **muted** during all the presentations (20 minutes each).

You will be able to ask questions during the event all the time via the **webchat**.

There will be a 5-minutes **Q&A** session after each presentation, a 10-minutes **Q&A** session before each break and a longer one at the end of the event. Please turn on your camera only while talking.



There will be 2 15-minutes **Coffee breaks**, one in the morning one in the afternoon.

Lunch break (1 hour) is at 12,45 CET.



For the **Speakers**: please stick to 20 minutes for your presentation.



Few useful links before starting...

ATD3 WEBSITE [Indico.esa.int/event/389/](https://indico.esa.int/event/389/)

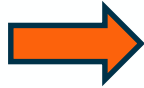
PARTICIPANTS LIST [Indico.esa.int/event/389/registrations/participants](https://indico.esa.int/event/389/registrations/participants)

TIMETABLE <https://indico.esa.int/event/389/timetable/>

CONTRIBUTION LIST <https://indico.esa.int/event/389/contributions/>

ABSTRACTS

At the bottom of the
homepage



Should you need any further information,
please do not hesitate to contact me at Cristina.de.persis@esa.int



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ENJOY!



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ACKNOWLEDGMENTS

- To all the Speakers:
 - Dr. Hideyuki Tanno
 - Geert Smet
 - Dr Jéromine Dumon
 - Dr Pierre Schrooyen
 - Dr. Bernd Helber
 - Dr. Gianpiero Colonna
 - Thomas Martinez
 - Fábio Morgado
 - Martin Spel
 - Pierre Van Hauwaert
 - Dr Michael Probyn-Skoufa
 - Dr Max Sardou
 - Dr. Antonio Esposito
 - Adam Pagan
 - Christopher L. Ostrom
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 - Orr Cohen
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THANK YOU ALL!! SEE YOU IN 2022