

FULL FLIGHT SIMULATOR: TESTING AND RESEARCH PLATFORM

The webinar deals with an introduction to the world of flight simulators employed as research platforms and not exclusively as training tools. The main simulator levels, recognized by the EASA, European Union Aviation Safety Agency, will be firstly described focusing on FFS (Full Flight Simulator). Then, the main research contexts, taking advantage of flight simulators, will be presented with some referenced research activities. This will be followed by the description of research topics concerning the human factor and comfort in the simulated environments of cockpit and cabin.

Firstly, the objective and subjective techniques used to evaluate the aeronautical human factor will be described. Next, the main subjective tests for real-time and post-tasks are given, evaluating the main advantages and drawbacks. Then, objective measurement based on existing technologies will be introduced, particularly sensors exploitable inside the aircraft. Also, for these techniques, the main advantages and drawbacks will be shown. Finally, a brief overview of the mathematical correlation tools that can relate the two types of measurement data will be presented with reference to some experimental study cases.

In the second part of the course, the research topic of aviation comfort will be introduced. First, the human body's biodynamic modelling techniques will be described with an overview of the models employed in the aeronautical framework, followed by experimental results. Finally, the analytical and numerical modelling will be shown with examples of evaluation on the human body's comfort indexes with aeronautical manufacturers' restrictions.

Learning objectives: Simulator classification, standards, and experimental research activities; Human Factors in cockpit and cabin environment; Human Body Comfort for pilot and passenger.

Target audience: doctoral students, non-academic professionals, and undergraduate students.

Dates and time: 14-21-28 January 2022 and 4 February 2022, 15:00-17:00 CET

Speakers

Born in 1978, prof. **Andrea Alaimo** obtained degrees in Aerospace Engineering at the University of Palermo and a PhD in Aerospace Structure at the University of Pisa. In 2003 he was visiting student at the Queen Mary University of London, and, between 2005 and 2009, he held a position as a postdoc research fellow at the University of Palermo. Since 2010 he belongs to the University of Enna "Kore", initially as Assistant Professor and since 2018, as Full Professor in Aerospace Structures. He is President of the Aerospace bachelor degree course at the "Kore" University, and he is Director of the MARTA Centre, one of the largest research facilities in Europe for Aviation Human Factor. Andrea Alaimo belongs the AIDAA, the Italian aerospace association, since 2004, he is a member of the ICAS Programme Committee since 2018, and he is the Director-General of CEAS since 2021.

Antonio Esposito is an Assistant Professor in the Faculty of Engineering and Architecture of the Kore University of Enna. His research activities on flight mechanics have led him to evaluate the main user "human being" of the aircraft in the last years. He is the head of the Human Factor in Aeronautics laboratory at the Mediterranean Aeronautics Research & Training Academy - MARTA Centre.

Registration and Webinar Platform

The registration is mandatory via the online form at the web [link](#)

Deadline: 30 November 2021

Fees: there are no registration fees for AIDAA members. Instructions to become a member can be found here: <https://www.aidaa.it/become-a-member/>

Webinar platform: Webex, a link will be sent via email a few days before the event.

