

# ZAL Discourse: Flying Green Tomorrow

## The importance of hydrogen for future aviation

Date: Tuesday, 18 Mai 2021  
Time: 15:00 Europe/Berlin

### Agenda

- 15:00 Welcome & Introduction  
– Holger Kuhn & Meike Herbst, ZAL GmbH
- 15:15 "Aviation powered by Hydrogen –  
Research activities and infrastructure of ZAL GmbH"  
– Sebastian Altmann (ZAL GmbH), Senior Expert Fuel Cell Lab
- 15:45 "Hydrogen – A universal solution for Aviation?"  
– Tanja Neuland (Airbus), Focal point Hydrogen Aircraft Technologies Cluster  
Germany
- 16:15 "Eliminating Climate Impact from Aviation – Potential pathways that are  
currently explored in DLR's EXACT project"  
– Dr. Johannes Hartmann, DLR Institute for System Architectures in Aeronautics &  
project leader of the concept study for eco-efficient flying



Sustainability and hydrogen: those two terms can hardly be separated in aviation. Hydrogen is an essential element for achieving global and national climate protection targets. It is also the focus of Hamburg's newly established hydrogen cluster structure. Under the motto “away from fossil fuels and toward low-emission aircraft”, Hamburg's aviation stakeholders are working on new flight concepts and technology roadmaps.

An important meeting place for this is the ZAL Center for Applied Aeronautical Research, because its infrastructure offers tenants and partners the perfect platform for research and exchange.

In this discourse, you will gain exclusive insights into the hydrogen activities at ZAL:

In three exciting lectures, experts will reveal more about the previous and future strategies on the way to low-emission flying. After each presentation, you will get the chance to directly address the speakers with your questions.

**„Aviation powered by Hydrogen – research activities and infrastructure of ZAL GmbH“**

– Sebastian Altmann (ZAL GmbH), Senior Expert Fuel Cell Lab

Hydrogen, the promising fuel of the future, is receiving increasing attention in aviation. Before a commercial use is feasible though, there are still some questions to be answered. ZAL GmbH addresses some of these within several research projects: For example, by testing lightweight construction methods for hydrogen systems and by examining the aptitude of H<sub>2</sub> storage technologies in different aircraft. In this Discourse, you will gain insights into our activities and findings to this day.

**„Hydrogen – A universal solution for Aviation?“**

– Tanja Neuland (Airbus), Focal point Hydrogen Aircraft Technologies Cluster Germany

How can hydrogen contribute to climate-neutral aviation? What are the potentials of using it as fuel, and what does this mean for the aviation industry in the long term? In her lecture, Tanja Neuland will discuss the current state of hydrogen-research at Airbus and lay out a roadmap of how hydrogen potentials can be exploited and optimized in the future.

**„Eliminating Climate Impact From Aviation - Potential pathways that are currently explored in DLR’s EXACT project“**

– Dr. Johannes Hartmann, DLR Institute for System Architectures in Aeronautics & project leader of the concept study for eco-efficient flying

Green energy sources are the key for climate neutral air mobility. In order to identify sustainable solutions for a green air transportation system, the aviation sector has to go hand in hand with the energy sector. In EXACT, researches from 20 different institutes and capabilities from four DLR divisions (energy, aviation, space & transport) are contributing to the 4-yr project EXACT. The aim is to identify aircraft concepts, enable technologies for climate neutral flight & define respective technology roadmaps.

Moderator



**Dr.-Ing. Sebastian Altmann**

Dr. Sebastian Altmann serves as Senior Expert Fuel Cell Lab at ZAL GmbH and has been with the company for more than ten years. Among other things, he is responsible for Fuel Cell Lab operations and for the supervision and management of several technology projects. Before his time at ZAL, Sebastian worked as a research assistant for the DLR Institute of Thermodynamics and the University of Stuttgart (Institute for Thermodynamics and Thermal Engineering). There he completed his doctoral thesis on "Investigations into the realization of unitized reversible fuel cells (URFC)".

Moderator



**Dipl.-Ing. Tanja Neuland**

Diploma Engineer Tanja Neuland has been with Airbus since 1998 and worked primarily in Engineering and Customer Services. Her bio also includes more than 16 years of leadership responsibility at Airbus. Amongst her many roles, she has been the Head Of Engineering Attestation A380, Head Of Material & Logistics Engineering, Head Of Seat Architecture and the Head of Quality for SATAIR. Now her focal point is the Hydrogen Aircraft Cluster Germany.

Moderator



**Dr.-Ing. Johannes Hartmann**

After graduation, Johannes Hartmann started working as an assistant professor at TU Berlin for conceptual aircraft design before he joined Airbus' flight physics department. In 2014 he was granted a doctorate in the field of air vehicle design. He finally started working as an air vehicle architect and integrator at the German Aerospace Center (DLR) in Hamburg in 2015. Johannes is currently leading the internal project EXACT and is accountable for several international partner projects within the scope of sustainable commercial aviation.

Moderator



**Dr.-Ing. Holger Kuhn**

Dr. Holger Kuhn serves as Senior Expert Fuel Cell Lab at ZAL GmbH and has been with the company since April 2020. Before his time at ZAL, Holger worked as a scientist with Bauhaus Luftfahrt e.V. in Taufkirchen, where he focused on electrochemical storage and conversion devices, electric flight, and technology assessment. With MTU Onsite Energy GmbH he developed components and conducted exclusive simulations for Molten-Carbonate Fuel cells within the R&D department. He completed his doctoral thesis at the ETH Zürich in the field of Physical Chemistry/ Electrochemistry with a focus on PEM Fuel Cells.

Moderator



**Meike Herbst**

Meike Herbst works as event manager at ZAL GmbH and has been with the company since 2019. She is responsible for the coordination and execution of several event formats, such as the ZAL Innovation Talks, Discourses and Science Slams, as well as a variety of internal events. Meike holds a bachelor's degree in Event Management from the University of Applied Sciences in Hanover and is currently working on her master's degree in business psychology, leadership, and management at SRH – The Mobile University.