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DGLR in cooperation with the RAeS, HAW Hamburg, ZAL and VDI invites to a lecture

Facing the Challenges of Aircraft Icing

Dr.-Ing. **Christoph Deiler**, Institute of Flight Systems, German Aerospace Center (DLR)

Date: **Thursday, 20 October 2022, 18:00 CET**
Online: https://purl.org/profscholz/zoom/2022-10-20

Icing can have hazardous effects on airplane performance characteristics. It can also be a limiting factor for the safe flight envelope. Icing-induced change of the aircraft's dynamic behavior and potential premature stall raise the need for pilot situational awareness and an adaptation of any aircraft control strategy. During the last decades, various accidents worldwide have shown the severity of icing related degradations as well as pilots' difficulties to cope with changes in aircraft behavior. One major cause for these accidents was that with rising air traffic, aircraft were increasingly operated in certain icing conditions containing supercooled large water droplets (SLD) against which current aircraft were not protected.

The presentation will introduce the phenomenon of aircraft icing and highlight the peculiarities related to SLD in aviation, also with regards to the regulations. Changes of aircraft characteristics, flight dynamics and handling qualities will be discussed. Countermeasures and detection technologies are key to safe aircraft operation in these hazardous conditions. An overview of anti-ice and de-icing systems as well as detailed information on recent research activities on robust and reliable ice detection will be given.

DGLR / HAW Prof. Dr.-Ing. Dieter Scholz Tel.: 040 42875 8825 info@ProfScholz.de
RAeS Richard Sanderson Tel.: 04167 92012 events@raes-hamburg.de

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