SCHWEIZERISCHE VEREINIGUNG FÜR FLUGWISSENSCHAFTEN
ASSOCIATION SUISSE DES SCIENCES AERONAUTIQUES
SWISS ASSOCIATION OF AERONAUTICAL SCIENCES

Einladung zum Vortrag

Advanced Low Noise Aircraft Configurations and Their Assessment - Past, Present and Future

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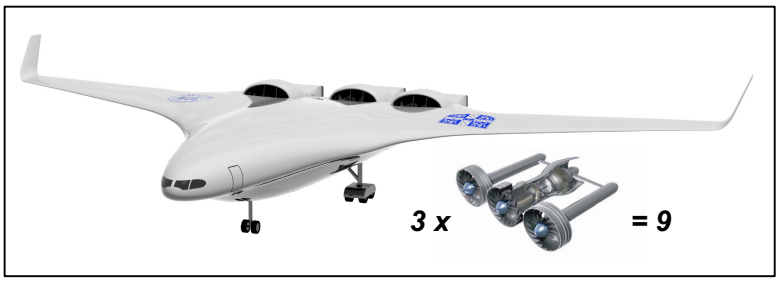

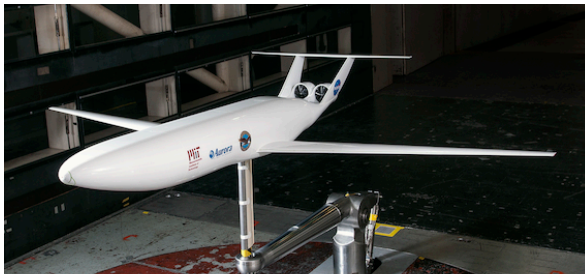

Datum: **Mittwoch, 10. April 2019**

Zeit: **17.30 Uhr**

Ort: **ETH Zürich, Maschinenlabor** **Hörsaal ML H 44 (Maschinenlabor)**

Aircraft noise remains the key inhibitor of the growth of air transportation but the focus of noise mitigation strategies has changed. The trend in decreasing propulsor fan pressure ratio for improved fuel burn and reduced environmental impact drops the propulsion system noise near or even below the noise level of the airframe. Jet noise has become less of a concern and, during approach and landing, the acoustic signature is predominantly set by the airframe. Novel aircraft concepts and architectures, enabled by distributed, more integrated, and boundary layer ingesting propulsion systems, pose new aero-acoustic problems which require innovative approaches and call for teaming and collaboration as the technological challenges cut across disciplines. One past example of such a collaborative research effort was the Silent Aircraft Initiative (SAI), aimed at the conceptual design of an aircraft imperceptible to the human ear outside the airport perimeter. This talk gives a brief summary of the Silent Aircraft Initiative, the SAX-40 aircraft design, and the noise reduction technologies which were pursued. A decade past SAI, novel aircraft architectures such as the D8 double bubble aircraft, the outcome of a joint effort between MIT, Aurora Flight Sciences and Pratt & Whitney, are being pursued in the quest of reducing the climate impact of aviation. With regulations continuing to reduce the allowable aviation noise emission levels, both new challenges and new opportunities are emerging. Electric, hybrid, and turbo-electric aircraft concepts are currently being investigated as potential game-changers. Independent of the level of electrification, noise will remain a major issue as air transportation is growing and mobility might become a key driver. The talk will discuss a selection of enabling technologies and their implications on acoustics and noise and will give a perspective on future trends and new directions in aero-acoustics required to address the challenges.

Wir freuen uns auf Ihre Teilnahme. Gäste sind herzlich willkommen.

Mit freundlichen Grüssen
Dr. Jürg Wildi, Präsident