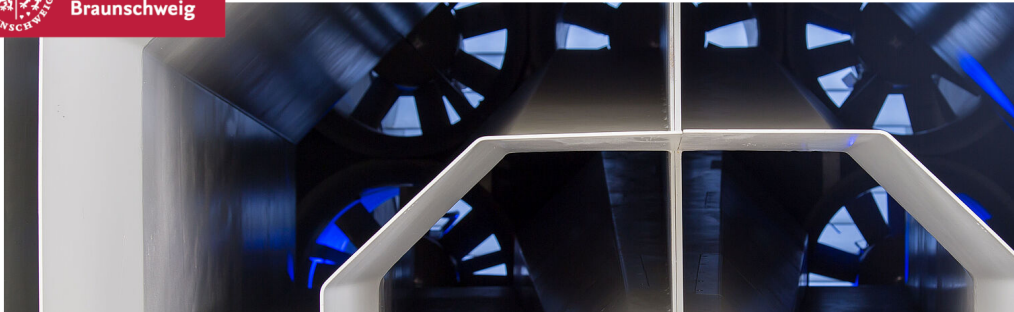


SE²A Newsletter 08/2020



SE²A Newsletter 08_2020

Dear members and friends of the cluster SE²A,

four months have passed since our last newsletter was published and a lot has happened since then. Despite the fact that the Corona pandemic still demands our attention, many of us have found creative ways to deal with and thus return to everyday life, however more decentralized than last year.

With this newsletter we would like to invite you to take a look back on what we have achieved in the second quarter of 2020 and look forward to informing you about future activities at the cluster!

With best regards,

Prof. Dr.-Ing. Jens Friedrichs
(Spokesperson SE²A)

Dr. Doris Pester
(SE²A-Managing-Director)

The SE²A-newsletter will be published three times per year. For further information please visit our website: www.tu-braunschweig.de/se2a

// LATEST NEWS

June 2020

SE²A – Fellowships for Experienced Researchers from abroad - Call for application

The Cluster of Excellence SE²A offers long-term research stays for excellent experienced researchers from abroad at the two recognition levels defined as "SE²A-Fellowships" and "SE²A-Awards". Close collaboration during a research stay with the scientists of the Cluster SE²A fertilises scientific exchange in a direct way, builds trust, and creates joint research results.

[Further reading](#)

July 2020

Call for project proposals

Preparation of alternative future scenarios with a focus on external framework conditions of the air transport system



Air transport system (ATS)

The Cluster of Excellence SE²A invites to tender a research project for the development of scenarios of alternative future. The content of the project is system modelling, multi-criteria evaluation and optimisation of the use of future technologies, which will provide the basis for a fundamental understanding of the air transport system and the determination of effective and efficient development paths towards more sustainability and Security in intelligent and autonomous systems. [Further reading](#)

July 2020

New W3 professorship "Software Systems Engineering in Mobility" located at the Faculty Computer Science at TU Braunschweig

With the establishment of the professorship, the field of Software Engineering at the TU Braunschweig will be expanded to include the highly topical research area of Systems Engineering and Safety and Security in intelligent and autonomous systems. The starting point is the Cluster of Excellence SE²A, whose aeronautical technological approaches are complemented by the professorship in the field of software systems.

[Further reading](#)



July 9, 2020

Closing event of the research club changing Prof. Rolf Radespiel presents certificates to participants

The closing event of the first changingING pupils group took place on July 9. Around 25 pupils were on site in three separate groups to receive their certificates and give final feedback.

Despite the constraints imposed by the Corona pandemic, it was important to the organizers and research associates, Dina Al-Kharabsheh and Dr. Anne Geese (Institute of didactics of the natural sciences), to say a personal goodbye to the pupils in compliance with the distancing rules. Even two participants who had travelled to the USA in the meantime did not miss the opportunity to follow the awarding of the certificate live via video chat and thereby also actively participated in the feedback round. Having snacks and drinks, there was also time to exchange views on career aspirations and what had been learned.



Prof. Dr.-Ing. Rolf Radespiel
presenting certificates



One of many great results of the
Research Club workshops



Digital feedback round with Laura
Krebs, who is a mentor in the
Research Club

[Further reading](#)

July 2020

Official intranet for SE²A

The SE²A managing office released a first version of the intranet. Here, the progress of each project can be monitored as well as the deliverables between the individual projects. Future developments will include additional visualisations and databases e.g. for the publication planning.

<https://intranet.se2a.ing.tu-bs.de>

August 2020

White paper „Climate and Aviation – Solution Approaches by Aeronautical Research“

The new white paper of the NFL analyzes the impact of aviation to the global greenhouse gas emissions. Since aviation is the major driver of greenhouse gas emissions in transportation, the paper outlines approaches towards sustainable aviation. The paper emphasizes further the bundling of competences in Braunschweig around this topic to address the problem from either a technical and ethical perspective.

The paper was written by Rolf Radespiel, Enrico Stoll, Peter Horst, Kai Höfner, Christoph Kessler and Lorenz Tichy.

[Further reading](#)

August 2020

Professor Rolf Radespiel honored with Excellence Award

The rare assigned Excellence Award of the Committee for Applied Automotive Technology (AVT) was presented to Professor Rolf Radespiel by the President of the TU Braunschweig, Professor Anke Kaysser-Pyzalla.

We share his delight about this special award and congratulate him warmly.

[Further reading](#)

// RESEARCH

The Cluster of Excellence "Sustainable and Energy-Efficient Aviation" is an interdisciplinary research center with the purpose of investigating technologies for a sustainable and eco-friendly air transport system. Scientists from aerospace, electrical, energy and chemical engineering are working on the reduction of emissions and noise, as well as recycling and life-cycle concepts for airframes and improvements in air traffic management. Technische Universität Braunschweig, the German Aerospace Center (DLR), Leibniz University Hannover (LUH), the Braunschweig University of Art (HBK) and the National Metrology Institute of Germany (PTB) have joined forces in this extraordinary scientific undertaking. The Cluster organisation is structured in three Integrated Cluster Areas (ICAs) reflecting the mission-critical research demands and following a coherent and coordinated roadmap. The three ICAs resulting from our assessment of critical research demand are:

ICA A: Assessment of the Air Transport System

The goal of this cluster area is the development of comprehensive criteria and metrics for sustainable air transport that can serve as a basis for decision-making and future scenarios. [more](#)



ICA B: Flight Physics and Vehicle Systems

This cluster area takes an in-depth look at technologies that have the potential to significantly reduce the power required from the propulsion system. [more](#)



ICA C: Energy Storage and Conversion

Even with major advances in aircraft drag and propulsion efficiency, carbon emissions can only be reduced, while carbon-free aviation requires new concepts for the energy supply. The cluster looks at advanced lithium-sulfur chemistry for solid-state batteries as well as load bearing batteries. [more](#)



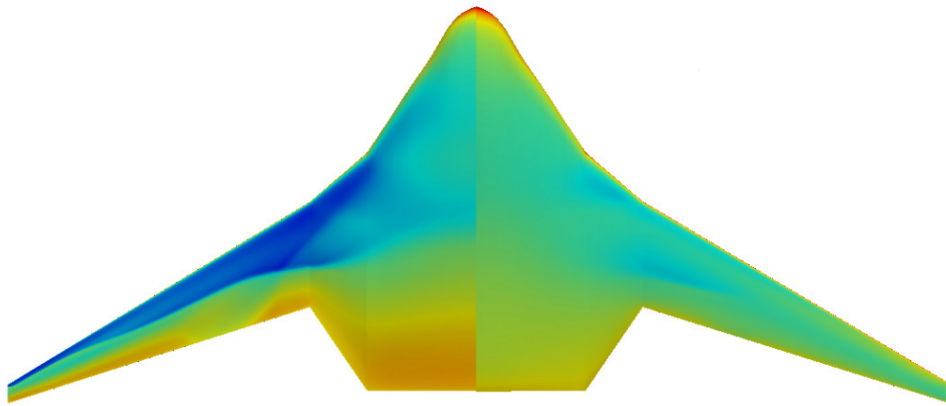
New research project on Scientific careers considering gender and family barriers

Prof. Eva Barlösius and PD Dr. Axel Philipps of Leibniz University Hannover have started their new research project on „Scientific and research-related careers in the

subjects of the clusters of excellence – reducing gender and family barriers“ (2020-2024). The project will be realised with the participation of several clusters of excellence and collaborative research centers – including SE²A. Aim of the project is to show typical scientific and research-related careers, identify gender and family specific barriers and develop proposals for their reduction as well as promote young talents in science and research & development.

Recent advances of the Long-Range Blended Wing Body Aircraft

How much can the fuel consumption reduced by active flow control, active load alleviation, and boundary layer ingestion? This question is answered in the latest paper by Karpuk et al. for the concept of a Blended Wing Body aircraft. The current study reveals a reduced fuel burn of more than 60 % compared to a Boeing 777. This work clearly shows advances in research of SE²A towards sustainable aviation.



S. Karpuk, Y. Liu, and A. Elham

Multi-Fidelity Design Optimization of a Long-Range Blended Wing Body Aircraft with New Airframe Technologies Aerospace 2020, 7(7), 87

// PUBLIC OUTREACH



June 2020

Find SE²A on twitter

SE²A successfully launched the twitter account [@_SE2A_](https://twitter.com/_SE2A_). From now on, the Cluster of Excellence can strengthen its connection with the interested public and the scientific community by publishing recent advances in daily research.

Click here to follow SE²A on twitter

In addition, SE²A joins the DFG (German Research Foundation) campaign #researchmatters about free and knowledge-based research. This special campaign addresses the major challenges of our time, like climate

change and energy transition in mobility. Eventually, only joint and interdisciplinary research as applied daily in the Cluster of Excellence, can make contributions to solving these issues.



New campaign shows the faces behind SE²A

The new portrait gallery for all doctoral researchers is set up. This gallery is hosted on the Cluster's website and gives a great overview about our young researchers in SE²A. Beside the pictures, the respective skills and motivation of each researcher is also presented. Thus, the gallery will invite the public to learn more about the individual skills present in the cluster. In addition, each scientist by knowing the skills of the others can improve their own interdisciplinary network. This might be helpful in the case of new challenges in daily research.



[Further details](#)

// EVENT ANNOUNCEMENT



Workshops for doctoral researchers | Braunschweig

September 1 - October 15, 2020 | Registration RISE Germany

September 11, 2020 | Short Course on Optimization by Prof. Ali Elham

September 29 - October 1, 2020 | SE²A Summer School

November 12-13, 2020 | Equal Opportunity Workshop "Networking"



Cluster of Excellence Symposium October 27-28, 2020 | Braunschweig

Please make a note! After a successful symposium last year, the second SE²A Symposium in October 2020 will continue its fruitful scientific exchange: External speakers, SE²A researchers and guests will have again the opportunity to exchange their ideas, discuss approaches, and network.



The German Aerospace Congress (DLRK) September 1-3, 2020 | Aachen

The German Aerospace Congress (DLRK) is a central event of the German-speaking aviation community. The Cluster of Excellence SE²A will participate in the Congress with two own SE²A-sessions bringing Cluster research to the front in the research community.

[More information](#)



International Conference "Fuel Science - From Production to Propulsion" June 22 - 24, 2021 | Aachen

Just as in the last years, the upcoming conference will show the interdisciplinary work of the excellence cluster as well as cover a wide range of contributions from various disciplines.

The event is aimed at participants from science and industry interested in challenges and solutions regarding novel biofuels and synthetic fuels from renewable energy and alternative carbon sources.

[More information](#)

Contact

Technische Universität Braunschweig
Sustainable and Energy-Efficient Aviation
Hermann-Blenk-Str. 42
38108 Braunschweig

Tel.: (0531) 391-94202

Mail: se2a@tu-braunschweig.de

Imprint

SE²A - Sustainable and Energy- Efficient
Aviation

Photo credit: SE²A (13), twitter (1),
DFG (1), DLRK (1), RWTH (1)

[Unsubscribe](#) Newsletter

[Legal Notice](#)

[Privacy](#)

Diese E-Mail wurde an tatjana.szalkau@tu-braunschweig.de versandt.
Sie haben diese E-Mail erhalten, weil Sie sich auf SE²A angemeldet haben.

[Abmelden](#)

