SAWE CEC Newsletter Winter 2026

Table of Contents

Editorial
Text by Miguel Mascaray, Jose-Maria Gutierrez-Zuazua, Werner Sellner, Kim Mittler, Marvin Siewert and Dirk Petersen.
Images by Kim Mittler, Marvin Siewert and Dirk Petersen

This newsletter is distributed to the current membership of the SAWE Central European Chapter.
Feel free to distribute to interested parties.

For comments and contribution contact:
cec.chapter@sawe.org.

Membership Meeting March 2025

Miguel Mascaray

Our last meeting with all members and supporters did not have the same audience turnout as the previous one, a clear drop in participants, but I must say that this was not due to a lack of content, because those of us who attended had the opportunity to listen to our executive director's presentation on the potential role of AI in our discipline. Bill Boze gave a clever presentation on how we could take advantage of AI, and he did so in a way that encouraged us to establish that opportunity for ourselves: don't just do this and that, but think for yourselves about the areas in which you can benefit from AI.

I am sure that many of those in attendance began to think about how they could do this. Speaking for myself, I must say that it sparked my interest. I am currently teaching at a university in a master's program and have already begun to use AI in a more interactive way than I had been doing until now. Thank you, Bill, for your excellent presentation.

Returning to the number of attendees, even though it was lower than expected, I believe we are on the right track to establish these two annual meetings with all CEC members as an unmissable event in our calendars. The progress made by our working groups, the summaries of the international conference and the upcoming SAWE events keep our chapter alive and active. As we prepare for the new meeting in March, I hope that, like us (the CEC Executive Committee), you recognize the importance of these sessions. And as Bill did, we encourage you to prepare and present topics in the future.

See you all in March!

The next CEC Membership Meeting is scheduled for 26.03.2026 at 18:00 CET.

Microsoft Teams
Join the meeting now
Meeting ID: 248 672 092 113 43
Passcode: Fy2Yk3EC

Working Groups

WG1 Corporations

Jose-Maria Gutierrez-Zuazua

Its purpose is to make our Society known to companies and built a network of collaborating corporations.

After the Christmas break, we are resuming activities at the SAWE-Central European Chapter Organization Committee. Related to the WG1 Corporations we have to continue the activities to get Sponsor/Exhibitors for Hamburg 2027 International Conference.

- First draft of potential Companies/

  Industries to be contacted for participation at the Hamburg 2027 Conference. It includes a large set of Companies covering all sectors (Manufacturing, Engineering, Metrology, etc.) and for all Products (Aerospace, Marine, Land Vehicles). This is partially done.

- Define a timetable, how and when to contact selected corporations to formally invite. Suitable after the next International Conference in Los Angeles in May 2026.

WG3 Universities
Miguel Mascaray

Third Time's the Charm!

After two attempts to give a talk on mass properties at ETSIAE, third time's the charm.

In our effort to bring our discipline closer to aeronautical engineering students, the group formed by Jose Maria Gutierrez, Tomas Viñas, and Martin Abad delivered an excellent presentation at the School of Aeronautical and Space Engineering in Madrid.

The school has a collaborative outreach initiative called the "Airbus Classroom", a space where Airbus professionals volunteer to give sessions across the different stages of aircraft design, manufacturing, and operation.

Obviously, with such a great opportunity at hand, our SAWE CEC WG3 couldn't let it slip.

The session took place on November 24th. The presenters showcased their deep knowledge of mass properties processes throughout the entire lifecycle of an aircraft.

Having three experienced speakers at the same time made the session engaging and dynamic, and open to all kinds of questions from the audience (about 40 students).

Following these initiatives, WG3 is reaching out to other universities to achieve, in this way, our goal of spreading knowledge and fostering interest in our field.

In the other hand, we still in contact with the CARLOS III University in Getafe to deliver the same talk. Hope this will happen soon!

WG4 Knowledge Sharing
Dirk Petersen

The aim of this group is to facilitate the knowledge transfer between the members of the SAWE CEC.

The SAWE offers a wide range of knowledge sharing opportunities, its content is updated to the need of the membership.

- Publications (paper, standards, recommended practices, journals).
- Training (in-person, virtual, online).
- Mentoring.
- Certification.
- Virtual Forums.
- Conferences.
- Chapter Meetings.

Take the offered hand and improve your knowledge. The upcoming 85th SAWE International Conference will see the introduction of a new training on Inertia, which is the result of the analysis of the past Certification exams.

Visit https://www.sawe.org/resources/.

SAWE Forum #15 "The Value of Hands-On Experience"
Dirk Petersen

The topic of the SAWE's first virtual forum in 2026 was the value of hands-on experience for mass properties engineers, with stories and lessons from experienced professionals across marine, aircraft, and space industries It was born from an exchange of mail between the presenters.

It was moderated by Damian Yañez in place of Dirk Petersen and contained prepared input from five presenters as well as verbal contribution from the audience.

Bill Boze emphasized the importance of understanding ship construction and production, learning from experienced workers, and the value of direct involvement in the shipyard. He shared a project about shipyard expansion and the challenges of moving large submarine components.

Robert Zimmerman shared lessons from aircraft and rocket projects, including the benefits of developing measurement instruments, and validating engineering concepts through hands-on testing.

Jason Booth discussed the importance of witnessing fabrication processes, building relationships with suppliers, and the impact of manufacturing awareness on engineering credibility and decision-making.

Damian Yañez highlighted the value of building measurement labs, adapting to unique test articles, and learning from international collaboration.
John Nakai focused on the complexity of final mass properties measurements, the importance of coordination with factory operations, and the need for diligence in test configuration and documentation.
Attendees shared their own hands-on experiences, emphasizing the importance of direct involvement, communication with shop floor personnel, and learning from unexpected challenges (e.g., measurement errors, material differences, and the need for thorough inventory during weighing).
Key Takeaways on Hands-On Experience are:
Hands-on experience transforms theory into practical engineering judgment.
It reveals real-world constraints, improves design quality, and enhances manufacturing processes.
Learning from past experiences helps anticipate and avoid mistakes.
Building rapport with shop personnel and understanding their challenges fosters trust and better outcomes.
All engineers are encouraged to get hands-on exposure to become better problem-solvers.
Thanks to all contributors, especially Damian, Bill, Robert, Jason and John.
This forum will be the basis for a presentation during the upcoming SAWE 85th International Conference. We will integrate your experience, contact damian.yanez@sawe.org or dirk.petersen@sawe.org.
The transcript will appear in one of the next SAWE Journals, the recording can be found in the SAWE Shop.
The series of Forums will continue. Do not miss:

- "Generative AI" with Ryan McClellan, in March 2026, virtual, moderated by Amanda Cutright.
- "The Mysteries of Target Weight Setting", 4/17/2026, virtual, moderated by Dirk Petersen, Doug Fisher, Heather Tomascek and Robert Hundl.
- "eVTOL", in-person during the 85th International Conference, moderated by Mark Beyer and Amanda Cutright.

Support Needed!

Influence the future of our profession and be part of our working groups. Working groups and their interim coordinators are:

- WG1: Corporations: Ruben Gonzalez-Gonzalez & Jose-Maria Gutierrez-Zuazua
- WG2: Technical Involvement: NN
- WG3: Universities: Miguel Mascaray
- WG4: Knowledge Transfer: Dirk Petersen

We Need Your Support ...

Please contact us.

Subpages for each working group are or will be available.

Who is Who?

In this space members of the SAWE Central European Chapter will have the opportunity to present themselves.

Volunteers are welcome to write a short article about their life inside and outside of Mass Properties.

Who is Kim?

Kim Mittler

Hello Everyone,

I am thrilled to introduce myself to this esteemed community of specialists and experts. With over 25 years of experience in Mass Properties at Airbus, my journey has been defined by a deep passion for weight engineering and the

architecture of flight.

Throughout my career, I have held technical responsibility across a diverse range of aircraft projects. My role has evolved from hands-on engineering to leading teams both functionally and disciplinarily.

I have always viewed Mass Properties as the ultimate multidisciplinary hub. It is not just about numbers; it's about managing, collaborating and learning - Mass Properties is everywhere:

- Interfaces and Design: Navigating the vast network of technical intersections within aircraft design and architecture.
- Data & Automation: Leveraging the immense volume of data to find new opportunities for automation and efficiency.
- Future Tech: Evaluating how emerging technologies fundamentally shift Mass Properties impacts.
- Transnational Synergy: Leading and collaborating across borders to achieve unified project goals.

Presentation "Numerical approach based on cuboid splitting to calculate the CG shift of liquid filled container resulting from rotations"

Marvin Siewert

Marvin Siewert studied Mathematics. His study was followed by a position as scientist at the Institute for "Integrative Simulation and Engineering of Materials and Processes" at University Bremen, at which he later continued as head of the subgroup for Residual Stress and Distortion. Since June 2023 he reinforces the Mass Properties Department at Airbus Operations GmbH in Bremen, Germany.

He will repeat his presentation given at the 84th SAWE International Conference during our next SAWE CEC-Membership Meeting.

Abstract:
As one fundamental mass property the Center of Gravity (CG) needs to be considered during the development of several industrial products, e.g., automotives, airplanes or several machines. If an object, e.g., a container or a tank, is filled with a liquid and gets rotated around a certain axis, the liquid will move and the mass distribution inside the object changes. This can cause a significant

shift of the CG. This contribution presents a robust and simple approach to analyse the CG shift caused by moved liquids after rotation of an object under static conditions.
Such an analysis could be done with closed analytical formulas based on geometrical considerations. This approach has the advantage of providing insights regarding the driving quantities and understanding of the underlying mechanisms, but has shortcomings with respect to the geometrical freedom.
As an alternative, a robust and simple numerical computation scheme is presented. It is based on discretizing the geometry of interests into cuboids, which can be activated or deactivated to model an empty or liquid filled volume, respectively. An adaptive splitting procedure of these cuboids is established to realize a sufficient resolution where it is needed while not wasting computational resources as well as avoiding memory issues. The CG of a geometry filled up to a desired filling level can then be computed for the rotated and non-rotated geometry by solving a non-linear equation numerically. Finally, the CG shift can be identified by comparing both values in a common coordinate system.
The numerical results for cuboid geometries are validated by comparing them with a numerical solution. In addition, the ability to use the scheme for more complex geometries is presented by calculating the CG shift of liquid filled cylinders.

SAWE 85th International Conference 2026

Dirk Petersen

The LA-Chapter is busy organizing this year's International Conference, scheduled from 17.05.2026 to 22.05.2026 in Valencia, north of Los Angeles.

Papers for the conference are still welcome and will fill the second technical track on Thursday.

The 2026 Conference will feature a Technical Forum on advances in electric vertical takeoff and landing (eVTOL) technology. Panelists will share their expertise before opening the floor to audience questions - an interactive exchange that has become a conference highlight.

For more information take a look at the Conference Announcement. Registration will start soon.

SAWE 86th International Conference 2027

Kim Mittler

SAWE and the Path to Hamburg

Beyond my daily work, I am deeply committed to the SAWE. I believe in the power of our community to push the boundaries of our craft.

Looking Ahead to 2027: I am supporting the Central European Chapter in making the SAWE International Conference to Hamburg in 2027 a success.

We are currently in the early stages of program development, and we are aiming for a truly unique event. Please be welcome to shape the conference with your ideas, topics you like to share and plenum discussions - and of course to increase your network aiming for setting standards and supporting each other. One key focus for 2027 will be strengthening our ties with Airlines, ensuring that the operational

perspective is integrated into our technical discourse.

I look forward to collaborate with all of you to make the Hamburg conference a landmark event for our Mass Properties discipline!

Provide us with your ideas, either by utilizing the online-survey and/or contacting Kim Mittler (kim.mittler@airbus.com) or Dirk Petersen (dirk.petersen@sawe.org).

LTH 154
Werner Sellner

Report of the Working Group "Mass Analysis" at Deutsche Aircraft Group in Oberpfaffenhofen, Wessling, Germany.

This meeting was excellently organized by Derya Kilic, the Head of Mass Properties at Deutsche Aircraft Group. We have had 17 permanent and 3 temporary participants.
First Derya Kilic gave us an overview of Deutsche Aircraft Group and the current programs, especially the Do328eco. Martin Böhm from the IABG, gave us the Status Report of the LTH-Coordination Office. Lars Brandt - DAG reported about R&T Studies at Deutsche Aircraft Group. Alexandros Lessis from Bauhaus Luftfahrt presented a comparison of "Semi-empirical wing mass estimation methods".
Marvin Siewert from Airbus Operations in Bremen followed with his presentation "Numerical approach based on cuboid splitting to calculate the CG-shift of liquid filled container resulting from rotations". Regina Pouzolz from DAG presented us "Pushing the boundaries for the climate - Targeted innovation in hydrocarbon-powered aviation"
On the second day Dirk Petersen from SAWE gave us an update on SAWE-activities were provided, including membership development, publications, mentoring status, and ongoing training and certification initiatives. An overview of future events was presented, highlighting the 85th SAWE International Conference 2026 and the planned 86th SAWE International Conference 2027 in Hamburg, including a call for contribution and community support.
Dirk Petersen from SAWE and the Chairman of the LTH-Working Group - "Mass Standard" gave us a Status-Report of the Group Activities.
Martin Bura from Airbus Defence and Space presented us the topic "Mass Estimation in Predesign" The next presentation was from Alexander Frühbeis-DAG with the title "Future Propulsion Options and Alternative Fuels Do328eco". Hans-Peter Dahm from TGM and Chairman of the LTH-Working Group "Value of the Pound" gave us his Status-Report.
Again from Hans-Peter Dahm from TGM we got an interesting presentation with the title "AL-Lightweight Agent and Mass Properties Analysis"
All this presentations were very interesting and we have had long discussions.

The next (155th) Meeting of the LTH/SAWE Working Group "Mass Analysis"
will be held at MTU Aero Engines in Munich.
The date is the 24th + 25th of March 2026.
The meeting will be organized by Thomas Weltrowski.

What's next?
Dirk Petersen

- SAWE Virtual Forum "Generative AI, March 2026, moderated by Amanda Cutright.
- LTH 155 24. and 25.03 2026, Munich.
- Virtual CEC Membership Meeting – 26.03.2026 18:00 CET – non-members welcome, no fee.

  Microsoft Teams
  Join the meeting now
  Meeting ID: 248 672 092 113 43
  Passcode: Fy2Yk3EC

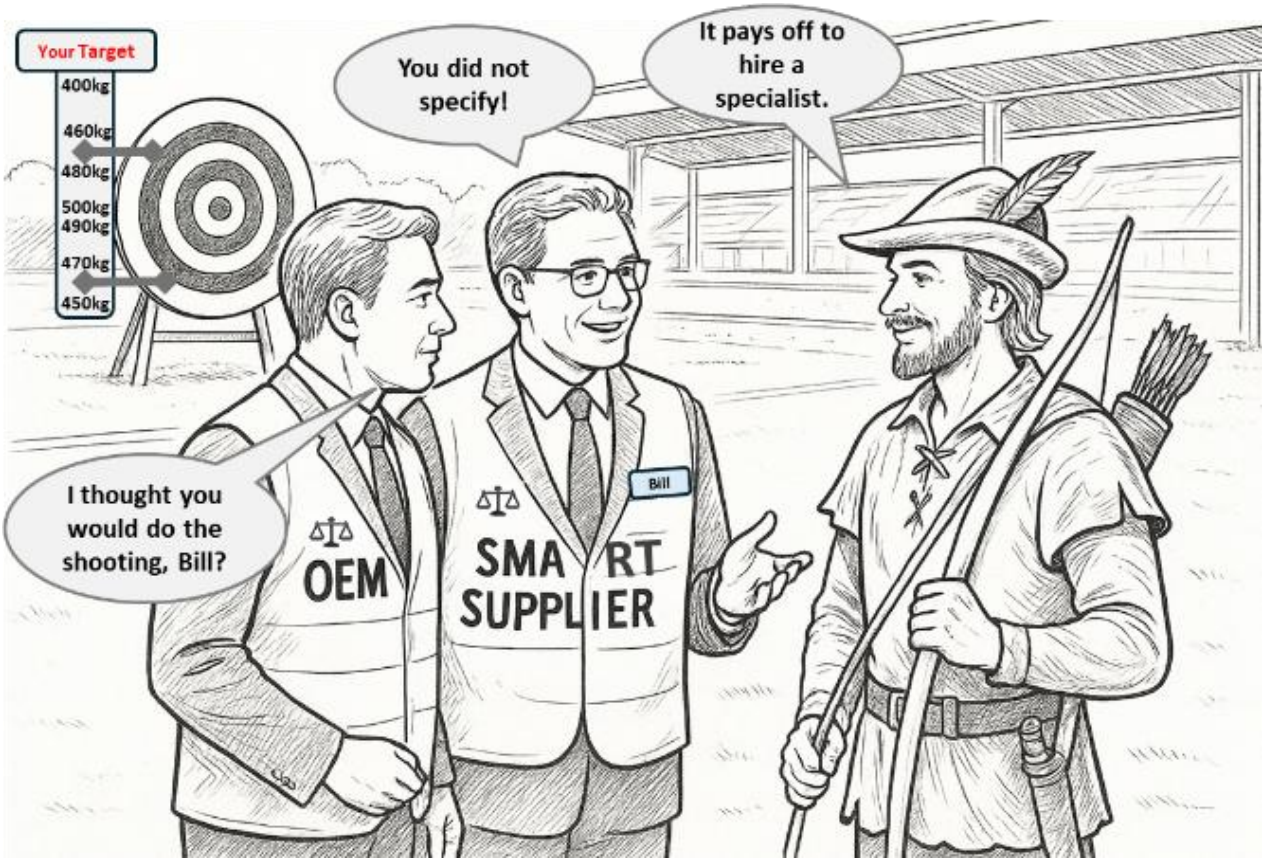
- SAWE Virtual Forum "The Mysteries of Target Weight Setting", 17.04.2026, moderated by Dirk Petersen.
- SAWE International Conference, 17.-22.05.2025.
- LTH 156 – June/July 2026
- CEC Newsletter Summer 2026 – August 2026
- CEC Membership Meeting – October 2026 – non-members welcome, no fee
- LTH 157 – November 2026

Monitor our website for updated information on future events.

We are looking for more comics, jokes and stories for the next versions of the newsletter. Do not hesitate to send them to "contact us".

Seriously!

Dirk Petersen



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