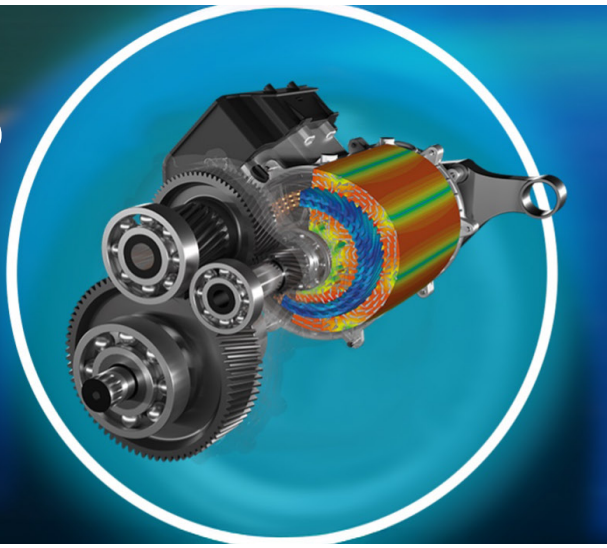
E-MACHINE WORKSHOP SIMULIA TECHNOLOGY DAYS 2025

4 One-Day Workshops in 4 Locations

October & November 2025



ARE YOU READY TO TAKE YOUR ELECTRICAL MACHINE DESIGNS TO THE NEXT LEVEL?

Join our SIMULIA technical experts at this exclusive one-day event, where you will gain cutting-edge insights and techniques on simulation for electrical machines to enhance your design process and drive innovation in your projects.

WHY E-MACHINE SIMULATION?

Traditional methods are no longer enough in the fast-evolving world of electrical machine design. Simulation empowers engineers to:

- Accelerate development timelines by identifying potential issues early
- Optimize designs for performance, cost, and efficiency
- Ensure reliability by simulating real-world conditions, reducing the risk of failure in the field

This event is designed for anyone involved in developing electric motors, drives, or complete e-drive systems. You'll gain practical skills to streamline your workflow and create more reliable, high-performance electrical machines.

In this eBook guide, you'll find all the essential details to help you decide to join us for an immersive, one-day, in-person workshop! We're hosting these sessions in four convenient locations. Read on and find the event at a location near you, view the agenda, and meet the event speakers.

CONTENT

LEARN FROM TOP ENGINEERS ABOUT

- Electromagnetic Design of Electrical Machines
- Noise, Vibration, and Harshness (NVH)
- E-Drive Design using MODSIM

OVERVIEW

SIMULIA offers you an exclusive full-day event where industry experts from Dassault Systèmes will share cutting-edge insights and techniques on simulation for electrical machines. Whether you're a seasoned engineer or just stepping into the field, this event will equip you with the tools to enhance your design process and drive innovation in your projects.

We are hosting this in-person event in four different European locations.

WHAT'S ON THE AGENDA?

1. **Electromagnetic Design of Electrical Machines**
   - Explore advanced techniques for modeling and simulating electromagnetic fields
   - Dive into non-parametric optimization to achieve the best possible design outcomes
   - Maximize machine efficiency with simulation-based methods
2. **Noise, Vibration, and Harshness (NVH) in Electrical Machines**
   - Learn how simulation tools can predict and mitigate NVH issues early in the design process
   - Improve the quality of your machines, ensuring quieter and smoother operations in real-world conditions
   - Streamline NVH analysis workflows with Dassault Systèmes' specialized tools (CST Studio Suite and Manatee)
3. **E-Drive Design using MODSIM**
   - Discover the power of **MODSIM** (**MOD**eling and **SIM**ulation) — a unified modeling and simulation approach that bridges CAD and simulation in a single digital thread

WHY ATTEND?

- Expert-led sessions by top engineers at Dassault Systèmes
- Hands-on demonstrations of advanced simulation software
- Networking opportunities with industry peers and professionals
- Gain actionable knowledge that you can apply directly to your projects

Whether you're designing electric motors, drives, or complete e-drive systems, this event will help you optimize your workflow and create more reliable, high-performance electrical machines.

Let's innovate together and shape the future of electrical machine design through simulation..

Attendance is free, but space is limited! Reserve your spot today.

LOCATIONS, DATES & TIMES

Join us for an immersive, one-day workshop! We are hosting this in-person event in four European locations. Find the one nearest to you:

- **Velizy, France | October 21, 2025**

  Dassault Systèmes Paris Campus
  10, rue Marcel Dassault Paris Campus
  78140 Vélizy-Villacoublay
  France

- **Milan, Italy | October 30, 2025**

  Dassault Systèmes Milano Segrate
  Segreen Business Park
  Via San Bovio 3
  20054 Segrate, MI
  Italy

- **Darmstadt, Germany | November 12, 2025**

  Dassault Systèmes Darmstadt
  Bad Nauheimer Strasse 19
  64289 Darmstadt
  Germany

- **Nottingham, UK | November 18, 2025**

  Dassault Systèmes Nottingham
  Strelley Hall., Main Street. Strelley
  Nottingham NG8 6PE
  United Kingdom

Each event agenda runs from 9:30–17:00.
Doors open at 9:00 for registration.

REGISTER NOW

To find out more and register, either use the above QR Code or go to:

https://myevents.3ds.com/simulia-technology-days-e-machine-workshop-series

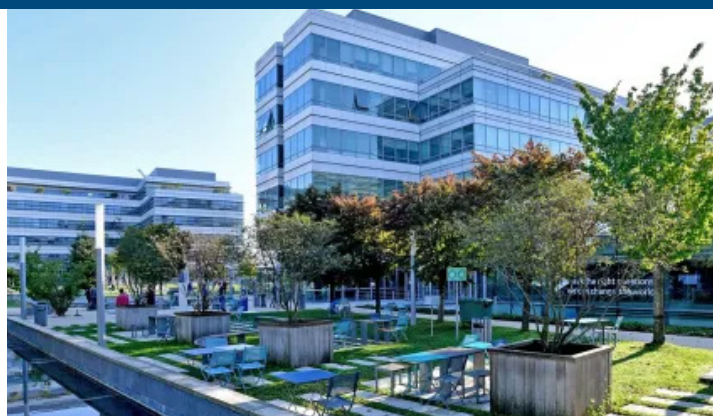
1ST WORKSHOP | EUROWEST | FRANCE

DATE: October 21, 2025

EVENT LANGUAGE: French

ADDRESS:

Dassault Systèmes Paris Campus
10, rue Marcel Dassault Paris Campus,
Vélizy-Villacoublay, 78140, France



AGENDA | OCTOBER 21, 2025 | DASSAULT SYSTÈMES PARIS CAMPUS

Start	End	Title / Topic	Speaker
9:00	**9:30**	**REGISTRATION & WELCOME COFEE | 30 MINUTES**	
9:30	10:00	Welcome & Introduction	Ousmane Fall *Dassault Systèmes*
	SESSION:	**ELECTROMAGNETIC DESIGN**	
10:00	10:45	Extraction of Electromagnetic KPIs	Dan Ilea *Dassault Systèmes*
10:45	11:30	Extraction of 3D Parasitic Effects	Ousmane Fall *Dassault Systèmes*
11:30	12:00	Considering Thermal Effects	Bilqis Mohamodhosen *Dassault Systèmes*
12:00	**13:00**	**LUNCH | 60 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 1**	
13:00	13:45	E-NVH Concept & Preliminary Design using SIMULIA Manatee	Martin Gessler & Sijie Ni *Dassault Systèmes*
13:45	14:15	Motor System Design — Workflow Integration	Ousmane Fall *Dassault Systèmes*
14:15	**14:45**	**COFFEE BREAK | 30 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 2**	
14:45	15:05	Subsystem Reduced Order Modeling in Detailed E-Drive Design	Ousmane Fall *Dassault Systèmes*
15:05	15:25	Non-Parametric Shape Optimization of the Motor	Dan Ilea *Dassault Systèmes*
	SESSION:	**MODSIM**	
15:25	15:55	MODSIM Driven E-Motor Design on the **3DEXPERIENCE** Platfrom	Bilquis Mohamodhosen *Dassault Systèmes*

2ND WORKSHOP | EUROMED | MILAN

DATE: October 30, 2025

EVENT LANGUAGE: English

ADDRESS:

Dassault Systèmes Milano Segrate
Segreen Business Park, Via San Bovio 3,
Segrate, MI, 20054, Italy

PRE-REQUISITE*:

For the Hands-On Workshop, please bring your own laptop.
You will receive an evaluation license.

AGENDA | OCTOBER 30, 2025 | DASSAULT SYSTÈMES MILANO SEGRATE

Start	End	Title / Topic	Speaker
9:00	**9:30**	**REGISTRATION & WELCOME COFEE | 30 MINUTES**	
9:30	10:00	Welcome & Introduction	Davide Tallini *Dassault Systèmes*
	SESSION:	**ELECTROMAGNETIC DESIGN**	
10:00	10:40	Extraction of Electromagnetic KPIs	Christian Kremers *Dassault Systèmes*
10:40	11:20	Extraction of 3D Parasitic Effects	Yoseph Gessese *Dassault Systèmes*
11:20	11:40	Considering Thermal Effects	Davide Tallini & Christian Kremers *Dassault Systèmes*
11:40	12:00	CST Studio as a Tool for Electric Motorcycle Prototype Development	Nicolò Girino *Polimi Motorcycle Factory*
12:00	**13:00**	**LUNCH | 60 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 1**	
13:00	13:45	E-NVH Concept & Preliminary Design using SIMULIA Manatee	Nicolas Strubel *Dassault Systèmes*
13:45	14:15	Motor System Design — Workflow Integration	Christian Kremers *Dassault Systèmes*
14:15	**14:45**	**COFFEE BREAK | 30 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 2**	
14:45	15:05	Subsystem Reduced Order Modeling in Detailed E-Drive Design	Christian Kremers *Dassault Systèmes*
15:05	15:25	Non-Parametric Shape Optimization of the Motor	Christian Kremers *Dassault Systèmes*
	SESSION:	**MODSIM**	
15:25	15:55	MODSIM Driven E-Motor Design on the **3DEXPERIENCE** Platfrom	Yoseph Gessese *Dassault Systèmes*
15:55	**16:00**	**SHORT BREAK | 5 MINUTES**	
	SESSION:	**WORKSHOP**	
16:00	17:00	Manatee Hands-On Workshop*	Nicolas Strubel *Dassault Systèmes*

3RD WORKSHOP | EUROCENTRAL | DARMSTADT

DATE: November 12, 2025

EVENT LANGUAGE: English

ADDRESS:

Dassault Systèmes Darmstadt
Bad Nauheimer Strasse 19,
64289 Darmstadt, Germany

PRE-REQUISITE*:

For the Hands-On Workshop, please bring your own laptop.
You will receive an evaluation license.

AGENDA | NOVEMBER 12, 2025 | DASSAULT SYSTÈMES DARMSTADT

Start	End	Title / Topic	Speaker
9:00	**9:30**	**REGISTRATION & WELCOME COFEE | 30 MINUTES**	
9:30	10:00	Welcome & Introduction	Timo Baruth *Dassault Systèmes*
	SESSION:	**ELECTROMAGNETIC DESIGN**	
10:00	10:40	Extraction of Electromagnetic KPIs	Christian Kremers *Dassault Systèmes*
10:40	11:20	Extraction of 3D Parasitic Effects	Yoseph Gessese *Dassault Systèmes*
11:20	11:45	Considering Thermal Effects	Michael Harrach *Dassault Systèmes*
11:45	**12:45**	**LUNCH | 60 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 1**	
12:45	13:30	E-NVH Concept & Preliminary Design using SIMULIA Manatee	Anthony El Hajj *Dassault Systèmes*
13:30	14:00	Motor System Design — Workflow Integration	Christian Kremers *Dassault Systèmes*
14:00	**14:30**	**COFFEE BREAK | 30 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 2**	
14:30	14:55	Subsystem Reduced Order Modeling in Detailed E-Drive Design	Yi Zhou *Dassault Systèmes*
14:55	15:20	Non-Parametric Shape Optimization of the Motor	Yi Zhou *Dassault Systèmes*
	SESSION:	**MODSIM**	
15:20	15:50	MODSIM Driven E-Motor Design on the **3DEXPERIENCE** Platfrom	Yoseph Gessese *Dassault Systèmes*
15:50	**16:00**	**SHORT BREAK | 10 MINUTES**	
	SESSION:	**WORKSHOP**	
16:00	17:00	Manatee Hands-On Workshop*	Anthony El Hajj *Dassault Systèmes*

4TH WORKSHOP | EURONORTH | NOTTINGHAM

DATE: November 18, 2025

EVENT LANGUAGE: English

ADDRESS:

Dassault Systèmes Nottingham
Strelley Hall., Main Street. Strelley,
Nottingham, NG8 6PE, United Kingdom

PRE-REQUISITE*:

For the Hands-On Workshop, please bring your own laptop.
You will receive an evaluation license.

AGENDA | NOVEMBER 18, 2025 | DASSAULT SYSTÈMES NOTTINGHAM

Start	End	Title / Topic	Speaker
9:00	**9:30**	**REGISTRATION & WELCOME COFEE | 30 MINUTES**	
9:30	10:00	Welcome & Introduction	Mohan Jayawardene *Dassault Systèmes*
	SESSION:	**ELECTROMAGNETIC DESIGN**	
10:00	10:40	Extraction of Electromagnetic KPIs	Christian Kremers *Dassault Systèmes*
10:40	11:20	Extraction of 3D Parasitic Effects	Christian Kremers *Dassault Systèmes*
11:20	11:40	Considering Thermal Effects	Dan Ilea *Dassault Systèmes*
11:40	12:00	Customer Presentation (TBC)	Cutomer name (TBC) *Customer company (TBC)*
12:00	**13:00**	**LUNCH | 60 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 1**	
13:00	13:45	E-NVH Concept & Preliminary Design using SIMULIA Manatee	Nicolas Strubel & Karine Degrendele *Dassault Systèmes*
13:45	14:15	Motor System Design — Workflow Integration	Dan Ilea *Dassault Systèmes*
14:15	**14:45**	**COFFEE BREAK | 30 MINUTES**	
	SESSION:	**NVH CONFORMAL MOTOR AND E-DRIVE DESIGN | PART 2**	
14:45	15:05	Subsystem Reduced Order Modeling in Detailed E-Drive Design	Christian Kremers *Dassault Systèmes*
15:05	15:25	Non-Parametric Shape Optimization of the Motor	Dan Ilea *Dassault Systèmes*
	SESSION:	**MODSIM**	
15:25	15:55	MODSIM Driven E-Motor Design on the **3DEXPERIENCE** Platfrom	Sajid Asif *Dassault Systèmes*
15:55	**16:00**	**SHORT BREAK | 5 MINUTES**	
	SESSION:	**WORKSHOP**	
16:00	17:00	Manatee Hands-On Workshop*	Nicolas Strubel & Karine Degrendele *Dassault Systèmes*

MEET THE SPEAKERS

DASSAULT SYSTÈMES SPEAKERS

Sajid ASIF

EuroNorth SIMULIA Industry Process Consultant

Speaker at event: EuroNorth

Timo BARUTH

SIMULIA Industry Process Consultant Senior Manager

Speaker at event: EuroCentral

Karine DEGRENDELE

SIMULIA R&D Technology Manager

Speaker at event: EuroNorth

Anthony EL HAJJ

SIMULIA R&D Technology Specialist

Speaker at event: EuroCentral

Ousmane FALL

EUROWEST SIMULIA Industry Process Consultant Specialist

Speaker at event: EuroWest

Yoseph GESSESE

H&L and T&M Propulsion Enablement Industry Process Expert Senior Specialist

Speaker at event: EuroMed, EuroCentral

Martin GLESSER

SIMULIA R&D Technology Manager

Speaker at event: EuroWest

Michael HARRACH

SIMULIA R&D Industry Process Senior Specialist

Speaker at event: EuroCentral

Dan ILEA

SIMULIA Electromagnetics Industry Process Consultant Senior Manager

Speaker at event: EuroWest, EuroNorth

Mohan JAYAWARDENE

EURONORTH Partner Sales Manager — Sales Expert Director

Speaker at event: EuroNorth

Christian KREMERS

SIMULIA R&D Industry Process Senior Specialist

Speaker at event: EuroMed, EuroCentral, EuroNorth

Bilquis MOHAMODHOSEN

SIMULIA Electromagnetics Industry Process Consultant

Speaker at event: EuroWest

MEET THE SPEAKERS

DASSAULT SYSTÈMES SPEAKERS

Siji NI

SIMULIA R&D Technology Specialist

Speaker at event: EuroWest

Nicolas STRUBEL

SIMULIA R&D Technology Specialist

Speaker at event: EuroMed, EuroNorth

Davide TALLINI

EUROMED SIMULIA Industry Process Consultant Senior Manager

Speaker at event: EuroMed

Yi ZHOU

SIMULIA Industry Process Consultant

Speaker at event: EuroCentral

CUSTOMER SPEAKERS & ABSTRACTS

Polimi Motorcycle Factory | OCTOBER 30, 2025 | ITALY

Nicoló GIRINO

Automation Engineer

Polimi Motorcycle Factory

CST Studio as a Tool for Electric Motorcycle Prototype Development

Polimi Motorcycle Factory is the Motostudent team from Politecnico di Milano. It brings together more than 100 students who share the same goal: innovating and pushing performance to the limit.

Electric motorbikes have been a key area of development for the past seven years. This has allowed us to gain knowledge on different solutions for the future of sustainable motorsport. Thanks to this experience, the new electric prototype has been designed around high-capacity pouch cells, which will feed the brand new electric motor from Motostudent.

The motor has been studied through the software CST Studio, which helped in understanding its performance. The presentation will give an overview of how CST has been used.

ABSTRACTS | DASSAULT SYTÈMES

SESSION: ELECTROMAGNETIC DESIGN

Extraction of Electromagnetic KPIs

This presentation covers key aspects of e-machine optimization, including identifying relevant KPIs and leveraging the MODSIM approach to use parametric CAD models within CST Studio Suite. It explores typical machine outputs such as DQ models, torque vs. speed characteristics, and efficiency map calculation. Advanced topics like demagnetization, ROM extraction from finite element solutions, and using electromagnetic outputs for Multiphysics workflows (thermal, mechanical, and NVH) are also discussed.

Extraction of 3D Parasitic Effects

This presentation highlights various methods for identifying parasitic 3D effects that are not captured in traditional 2D finite element analysis (FEA), using a set of simplified 3D FE simulations. It also demonstrates how the insights gained can be effectively applied to enhance the precision of 2D FEA results.

Considering Thermal Effects

Building on concepts presented in earlier talks, this session will demonstrate how to analyze temperature hotspots and assess the performance of the cooling system within the CST Studio Suite GUI, incorporating both conduction and convection effects. Additionally, it will highlight key loss mechanisms and approaches for their effective simulation.

SESSION: NVH CONFORMAL MOTOR AND E-DRIVE DESIGN

E-NVH Concept & Preliminary Design using SIMULIA Manatee

This presentation illustrates the assessment of noise and vibrations of electric drives induced by electromagnetic forces with Manatee. A live simulation is first detailed analyzing the main magnetic noise issues on an advanced reference case. As designing high-quality electric machines requires subsequent e-NVH levels control, a noise mitigation technique based on a rotor dual-notch is then investigated. Tradeoffs between electromagnetic performances and acoustic levels are explored through a parameter sweep. An optimized electric machine design is finally identified, emphasizing the value of tracking the e-NVH risks from the beginning of industrial project.

Motor System Design — Workflow Integration

This presentation focuses on the exchange of electromagnetic quantities with both system-level simulations in Dymola and multibody dynamics in Simpack. It will demonstrate how to create reduced order models (ROMs) and how to apply them effectively across domains.

Subsystem Reduced Order Modeling in Detailed E-Drive Design

The presentation illustrates the integration of various physical principles when optimizing electrical machines. It explains how to encapsulate the behavior of an electrical machine in a Functional Mockup Unit (FMU) and provides an example of using an FMU, created with CST Studio Suite, in a system-level model. The presentation also discusses incorporating 3D effects from end windings into the FMU and the application of FMUs within Multiphysics workflows.

Non-Parametric Shape Optimization of the Motor

The presentation focuses on the optimization of electrical machines using non-parametric methods. It defines these optimization techniques and outlines the process of integrating parametric, topology, and shape optimization in a single process. The focus is on combining electromagnetic and mechanical optimization goals to perform multi-objective, non-parametric shape optimization on a permanent magnet machine.

ABSTRACTS | DASSAULT SYTÈMES

SESSION: MODSIM

MODSIM Driven E-Motor Design on 3DEXPERIENCE

Modeling and Simulation (MODSIM) bridges the traditional gap between CAD/Design and Simulation by introducing a unified data model on the **3DEXPERIENCE** platform. This session will demonstrate how this unification within a single environment can improve the efficiency of e-motor design and optimization, ultimately resulting in significantly shorter design cycles.

SESSION: WORKSHOP

Manatee Hands-On Workshop

The workshop focuses on the set up of an e-NVH simulation in Manatee software through a realistic demonstration case. The multiphysic simulation is used in preliminary stage to assess electric drive unit NVH behavior due to magnetic excitations induced by electrical machine operations. The simulation is run live, then NVH root causes are analyzed based on Manatee available post-processings.

This first calculation brings the possibility to control e-NVH levels through the implementation of rotor skewing, a specific noise mitigation technique natively available in Manatee. A parameter sweep is run on skew angle, allowing to obtain better noise and vibration performances.

The workshop is the opportunity to discover e-NVH physics illustrated via Manatee software, as well as share insights on e-NVH of dedicated industrial applications.

PLEASE NOTE: For the Hands-On Workshop, please bring your own laptop. You will receive an evaluation license.

3DEXPERIENCE®

Dassault Systèmes is a catalyst for human progress. Since 1981, the company has pioneered virtual worlds to improve real life for consumers, patients and citizens.

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Europe/Middle East/Africa
Dassault Systèmes
10, rue Marcel Dassault
CS 40501
78946 Vélizy-Villacoublay Cedex
France

Asia-Pacific
Dassault Systèmes
17F, Foxconn Building,
No. 1366, Lujiazui Ring Road
Pilot Free Trade Zone, Shanghai 200120
China

Americas
Dassault Systèmes
175 Wyman Street
Waltham, Massachusetts
02451-1223
USA

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