

Opening

Summer School on Nonlinear Optimization with Mixed Integer and Complementarity Constraints – NOMICC26

Moritz Diehl, Andrea Ghezzi, Sven Leyffer, and Armin Nurkanović

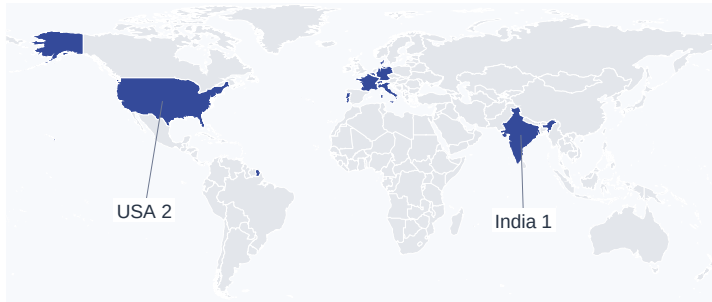
University of Freiburg, Argonne National Laboratory

September 29, 2026

The participants

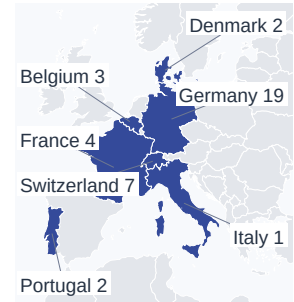
41 participants from 9 countries

Countries of affiliation



■ Countries represented in the participant roster

Europe



Map data: Natural Earth (public domain)

Germany 19, Switzerland 7, France 4, Belgium 3, five other countries 8.

Lecturers and exercise instructors

Lecturers



Sven Leyffer

Argonne National Laboratory



Moritz Diehl

University of Freiburg



Andrea Ghezzi

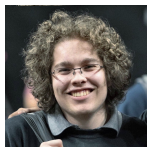
University of Freiburg



Armin Nurkanović

University of Freiburg

Exercises



Anton Pozharskiy

University of Freiburg



Andrea Ghezzi

University of Freiburg

 github.com/syscop/nomicc26_exercises

Exercise playground

Unsolved tasks

Complete a **MINLP** or **MPCC** task.
You can also extend it in your own way.
Task descriptions are in the example folders.

Extension ideas: new constraints or objectives, different or custom solvers, visualizations or animations.

Completed examples

Contact (MPCC) and **gearbox (MINLP)**
Use them as starting points for your own extensions.

Friday: 5–10 minute pitch

Show your results and what you learned.

 [Exercise folders on GitHub](#)

 [Register your team and topic](#)

The schedule

	Tue 29-Sep	Wed 30-Sep	Thu 1-Oct	Fri 2-Oct
09:00 - 10:30	Lecture 1: Modeling with mixed-integer nonlinear programs (Sven Leyffer)	Lecture 4: Nonlinear programming basics (Moritz Diehl)	Lecture 7: Outer approximation, Benders' decomposition (Andrea Ghezzi)	Lecture 10: Model predictive control for nonlinear and switched systems (Moritz Diehl)
	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00 - 12:30	Lecture 2: Modeling with mathematical programs with complementarity constraints (Armin Nurkanović)	Lecture 5: Theory of mathematical programs with complementarity constraints (Armin Nurkanović) Industry session: Business perspectives on numerical optimization (Gustaf Ehn, MOSEK)	Lecture 8: Branch-and-bound for convex mixed-integer programs (Sven Leyffer)	Summary and exercise presentations (all participants)
12:30-14:00	Lunch	Lunch	Lunch	Lunch
14:00 - 15:30	Lecture 3: LLM coding for optimization (Sven Leyffer)	Lecture 6: Algorithms for mathematical programs with complementarity constraints (Armin Nurkanović)	Lecture 9: Nonconvex mixed-integer nonlinear programming (Sven Leyffer)	
	Coffee Break	Coffee Break	Coffee Break	
16:00 - 17:30	Exercise 1: Modeling and coding with LLMs	Exercise 2: Formulating MINLPs and MPCCs -- Part 1	Exercise 3: Formulating MINLPs and MPCCs -- Part 2	

www.syscop.de/event/nomicc2026

All information and updates are always available on the homepage.