

# Program - Swiss Numerical Analysis Day, September 10, 2024

**Date and place:** The Swiss Numerical Analysis Day 2024 takes place on September 10, 2024 at University of Geneva, [Building Science II & III](#), Quai Ernest-Ansermet 30, 1205 Geneva, Switzerland, auditorium A150/A50A/A50B (ground floor).

Below is a preliminary version of the program. Please contact us as [snd24@unige.ch](mailto:snd24@unige.ch) for any queries.

- [Booklet of talk abstracts \(PDF\)](#)
- [Building map of the venue at Science II & III.](#)
- [PDF version of the program \(for printing\).](#)

**09:15 –** Registration, Welcome coffee and croissants

**10:10**

**10:10 room A150:** Opening

**10:15 –** **room A150:** Annika Lang (Chalmers/University of Gothenburg) - invited speaker  
*Stochastic partial differential equations on surfaces and evolving random surfaces: a computational approach*

**11:05**

**11:10 -** Coffee break and poster session: **main hall**

**11:40**

## room A150

Margherita Guido, EPFL

**11:40 -** *Subspace acceleration for a sequence of linear systems and application to plasma simulation*

**12:05**

Micol Bassanini, EPFL

**12:05 -** *Energy-stable spatial-temporal finite difference discretization of the two-fluid turbulent plasma model*

**12:30**

## room A50A

Maude Girardin, EPFL

*An adaptive finite elements - neural network method applied to parametric PDEs*

Carina Santos, UNIBAS

*A posteriori error estimates for the wave equation with mesh change in the leapfrog method*

## room A50B

Marco Favino, USI

*Fractures and thin heterogeneities as interface conditions*

Bastien Chaudet, HEIG-VD

*A sweeping domain decomposition method for elliptic problems*

**12:30 –** Lunch buffet (**cafeteria**) and poster session (**main hall**)

**14:15**

## room A150

Ibrahim Almuslimani, EPFL

**14:15 –** *Explicit stabilized implementation of implicit Runge-Kutta methods*

**14:40**

Liudi Lu, UNIGE

**14:40 –** *Time domain decomposition and application to PDE-constrained optimization problems*

**15:05**

## room A50A

Benjamin Carrel, UNIGE

*Non-intrusive projected exponential methods for stiff dynamical low-rank approximation problems*

Samuel Cruz, USI

*Parallel neural network training via nonlinearly preconditioned trust-region method*

## room A50B

Solcà Raffaele, ETHZ  
*GPU-enabled distributed dense eigensolver in DLA-Future*

Fabio Marcinnò, EPFL  
*A spline-based hexahedral mesh generator for coronary arteries*

**15:05 –** Coffee break and poster session: **main hall**

**15:45**

## room A150

Chuhe Lin, UZH

**15:45 –** *The Green's function for an acoustic half-space problem with impedance boundary conditions*

**16:10**

## room A50A

Aušra Pogoželskytė, UNIGE

*Analysis of Parareal with Spatial Coarsening*

## room A50B

Martina Busetto, ABB  
Corporate Research  
Switzerland

*A two-step method coupling eddy currents and magneto-statics*

**16:15 –** **room A150:** Gabriele Ciaramella (MOX Lab, Politecnico di Milano) - invited speaker

**17:05** *On space-time RAS methods for wave-type equations*

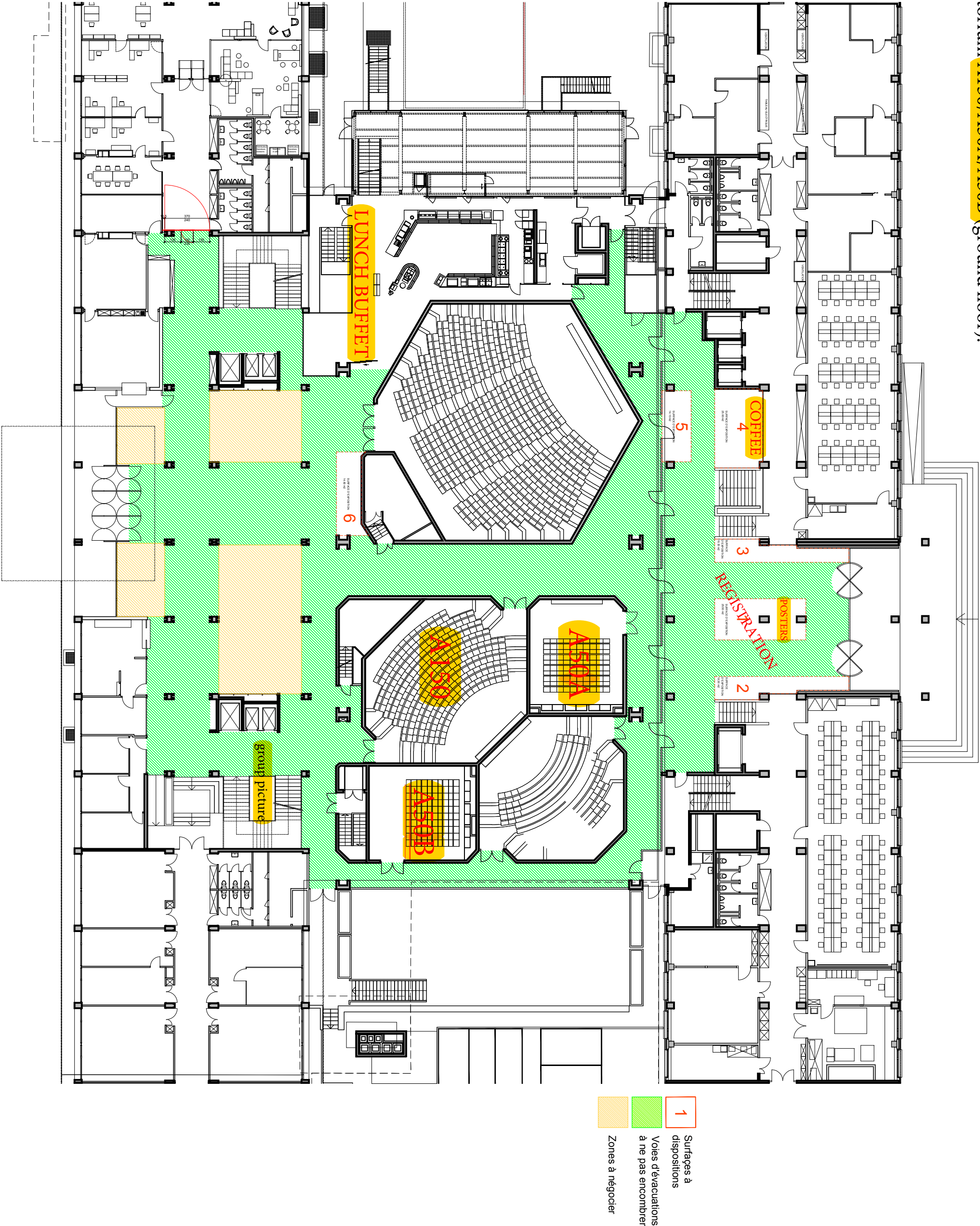
**17:10**

Closing

## List of posters presented at the Swiss Numerical Analysis Day 2024

- Oussama Al Jarroudi (Universität Basel), *Explicit local time-stepping methods for the wave equation in time-modulated metamaterials*
- Mahdiah Arezoomandan Mofrad (University of Geneva & Ferdowsi University of Mashhad), *Approximation of some classes of SPDEs with fractional Brownian motion using finite element methods*
- Eugen Bronasco (University of Geneva), *Using exotic aromatic forests to construct order two scheme for the invariant measure sampling of Langevin dynamics with variable diffusion*
- Haoze He (EPFL), *A randomized algorithm for simultaneously diagonalizing symmetric matrices by congruence*
- Hei Yin Lam (EPFL), *Subspace embedding with random Khatri-Rao products and its application to eigensolvers*
- Siwei Liao (University of Geneva), *The modulus-based two-step Levenberg-Marquardt method for solving horizontal linear complementarity problems*
- Fabio Matti (EPFL), *Randomized trace estimation for parameter-dependent matrices applied to spectral density approximation*
- Matteo Raviola (EPFL), *Multilevel active subspaces method*
- Sébastien Riffaud (EPFL), *Dynamical low-rank methods and discrete empirical interpolation method for nonlinear hemodynamics applications*
- Riccardo Saporiti (EPFL), *Probabilistic forecast of the day-ahead electricity consumption profile with stochastic differential equations.*
- Nian Shao (EPFL), *A randomized small-block Lanczos method for large-scale null space computations*
- Yafei Sun (University of Geneva), *Manifold parareal- a parareal algorithm for gradient flow*
- Thomas Trigo Trindade (EPFL), *A Petrov-Galerkin framework for dynamical low rank approximations*
- Teilo Wahl (University of Geneva), *Adversarial attacks on the human brain*
- Christoph Winkelmann (ABB Corporate Research Switzerland), *Computation of equivalent network parameters in a method coupling Eddy currents and magneto-statics*
- Li Zeng (EPFL), *Bounded KRnet and its applications to density estimation and approximation*
- Fabio Zoccolan (EPFL), *Numerical methods for DLRA applied to SDEs*

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# Swiss Numerical Analysis Day 2024

[unige.ch/math/snd24](https://unige.ch/math/snd24)  
[snd24@unige.ch](mailto:snd24@unige.ch)

**TUESDAY**  
**SEPTEMBER 10, 2024**

## INVITED PLENARY SPEAKERS

**Prof. Gabriele Ciaramella**  
(MOX Lab, Politecnico di Milano)

**Prof. Annika Lang**  
(Chalmers/University of Gothenburg)

## TOPICS

Scientific computing, numerical analysis,  
high-performance computing, visualization,  
numerical analysis in engineering,  
computational chemistry, biology, etc.

## REGISTRATION

[unige.ch/math/snd24](https://unige.ch/math/snd24)

Abstract submission deadline: **July 31<sup>st</sup>, 2024**

Registration deadline: **August 29<sup>th</sup>, 2024**

## VENUE

**University of Geneva, Sciences II & III**

Lecture Hall A150 (ground floor)

30 Quai Ernest-Ansermet, Geneva

## ORGANIZATION

Martin J. Gander, Bart Vandereycken, Gilles Vilmart  
(University of Geneva, Section of Mathematics)

## SPONSORS

We acknowledge partial support from the  
Swiss National Science Foundation.

**We look forward to seeing you in Geneva!**