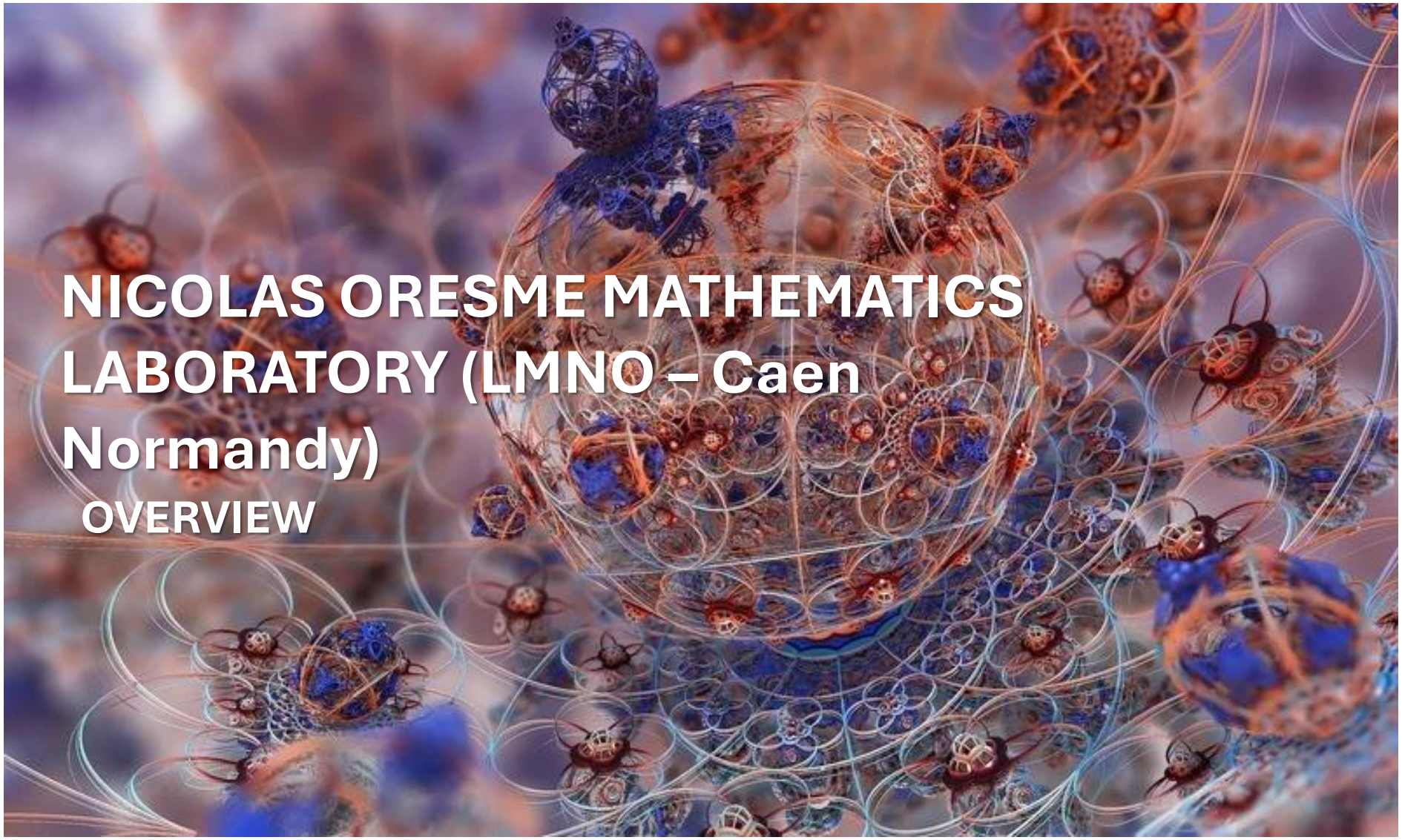


NICOLAS ORESME MATHEMATICS LABORATORY (LMNO – Caen Normandy)

OVERVIEW

LMNO
Laboratoire de Mathématiques Nicolas Oresme
Caen — Normandie

ORGANIZATIONAL CHART & GOVERNANCE

Organigramme du Laboratoire de Mathématiques Nicolas Oresme (LMNO), janvier 2026

Équipe de Direction
Directeur : Jérôme Poineau
Directeur adjoint : Eddy Godelle

Commission Budget
Leornardo Baffico, John Guaschi, Marc-Hubert Nicole

Administration/Gestion
Carole Less, Marianne Ristat

Conseil de Laboratoire
Daniel Caro, Christian Dogbé, Valérie Girardin, Philippe Karamian, Victoria Lebed, Tuan Ngo Dac, Alexandre Roy, André Sesboüé, Denis Simon, Roland Vergnioux, Martin Weimann, Shmuel Zelikson

Commission Informatique
André Sesboüé (responsable et CSSI), Christian Dogbé (responsable site web)

Commission Parité
Emmanuelle Féaux de Lacroix, Eddy Godelle, Bertrand Maillot

Commission Développement Durable
Victoria Lebed, Denis Simon, Roland Vergnioux

Correspondants
Archives : Jean-Claude Gruet
Bibliothèque et documentation : John Guaschi
Communication : Marc-Hubert Nicole
Développement durable et SMF : Victoria Lebed
Formation : Eddy Godelle
HAL : Clément Coine et Marianne Ristat
Hygiène et sécurité : David Vauclair
International : Floric Tavares Ribeiro
Math-entreprises, Valo., AMIES : Christian Dogbé
SMAI : Leornardo Baffico
Parité : Bertrand Maillot
Stagiaires : Emmanuelle Féaux et André Sesboüé

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INTRODUCTION

- **History**
  - Named after ***Nicolas Oresme***, a native of Normandy, and one of the brilliant scholars of the late Middle Ages. Oresme made groundbreaking contributions to Geometry and Physics.
  - UMR Unicaen – CNRS (since 2002)
  - Active member of the *Normandy Mathematics Federation* since 2010

- **Location : Regional Anchor**

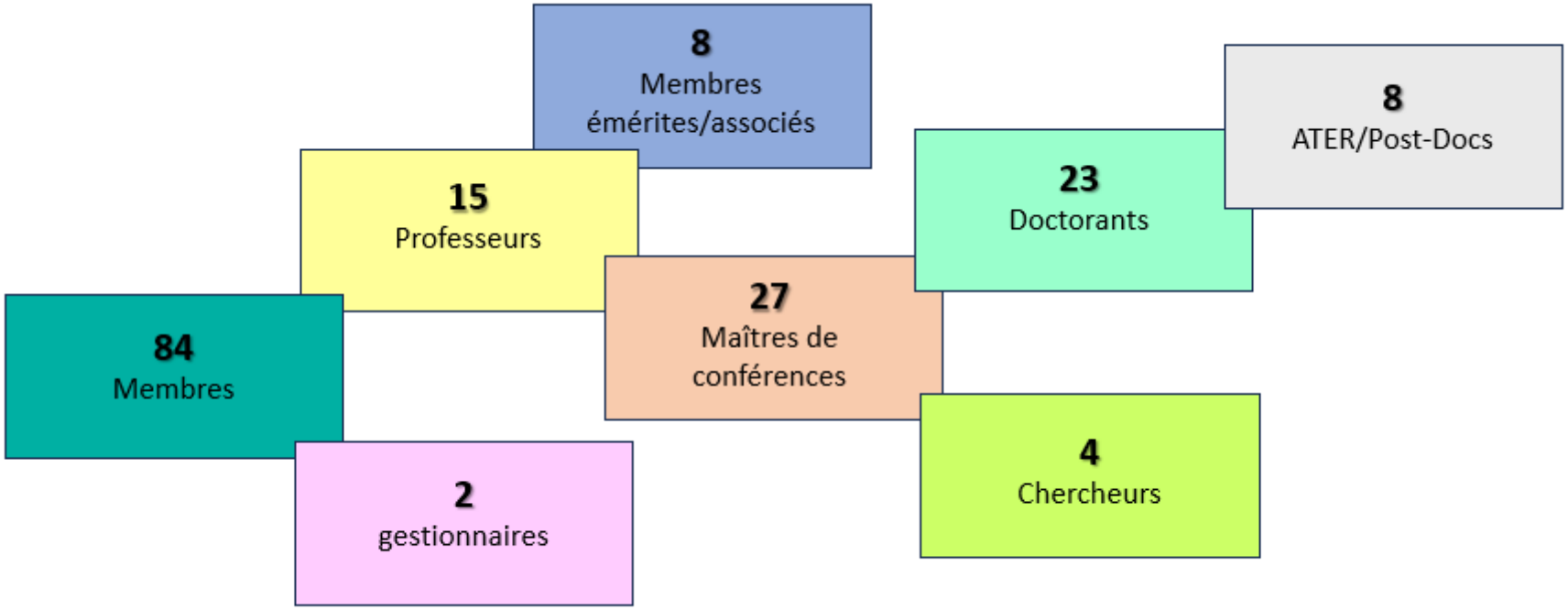
  Campus 2 – Sciences 3 Building, near the City center of Caen

- **Membership**
  - Approximately 80 members, including 50 Tenured Faculty members
  - 3 scientific teams
  - 1 cross-functional outreach team



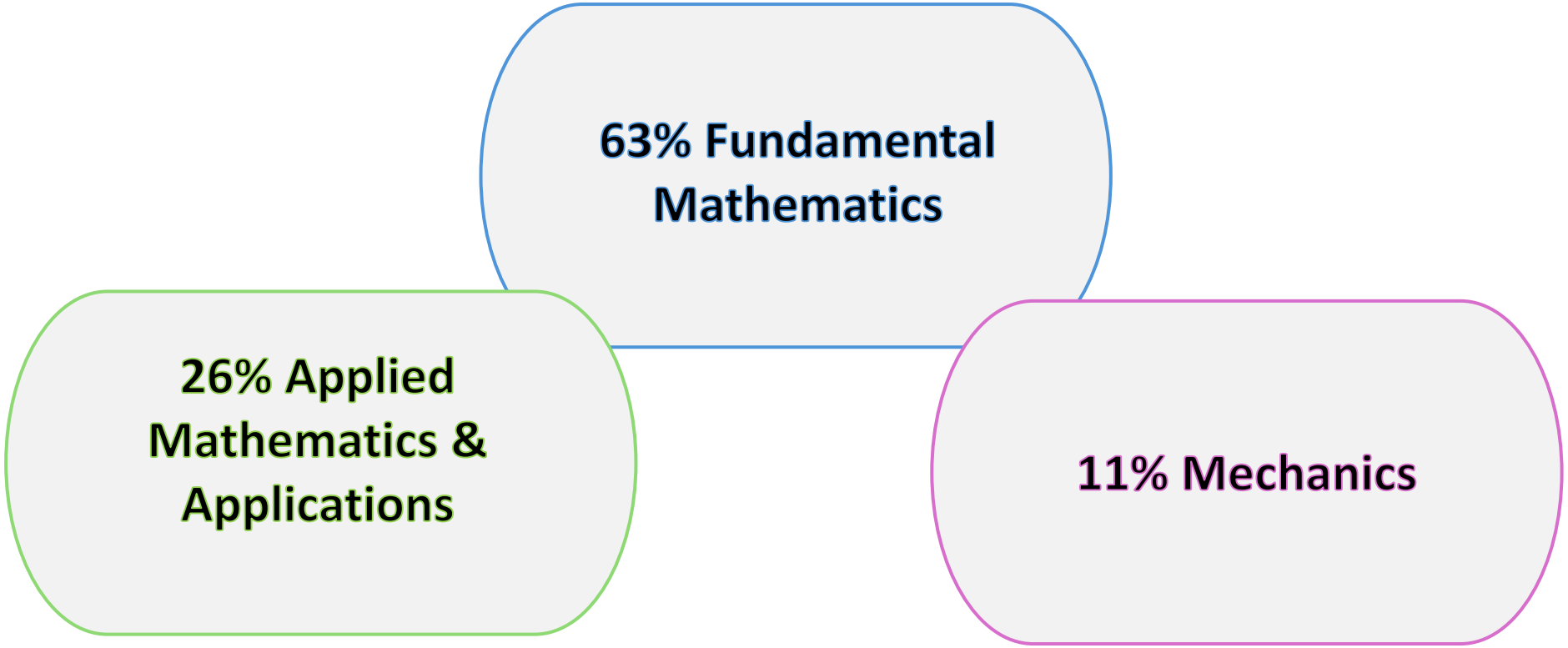
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LMNO BY KEY FIGURES



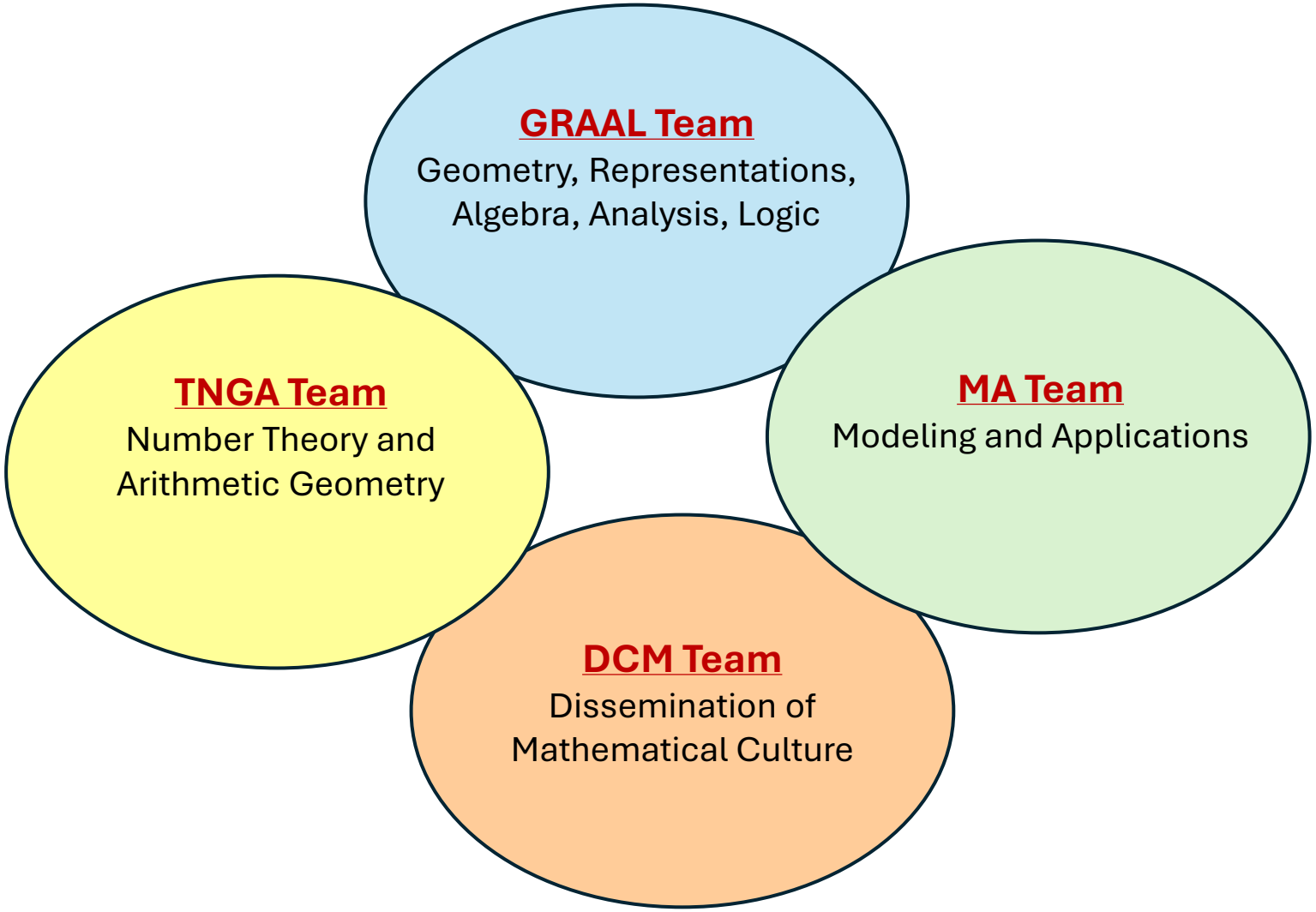
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LMNO SCIENTIFIC DOMAIN DISTRIBUTION



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SCIENTIFIC TEAMS & RESEARCH FOCUS



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SCIENTIFIC FOCUS

GRAAL Team :
Algebra, Analysis, Geometry & Logic

- Research Areas
  - Groups and Braids
  - Algebraic Combinatorics and Representation Theory
  - Operator Algebras and Quantum Groups
  - Set Theory and Lattices
  - History of Mathematics
- Major scientific contributions
  - **Quantum Groups (2023) :** Skalski, Vergnioux, Voigt, *"Hecke Algebras and the Schlichting Completion for Discrete Quantum Groups »* - Journal of the LMS
  - **Cluster Algebras (2026) :** Pressland, *"Quasi-coincidence of cluster structures on positroid varieties*" - Journal of the EMS



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SCIENTIFIC FOCUS

TNGA Team :
Number Theory & Arithmetic Geometry

- Research Areas
  - **Arithmetic** in positive characteristic, over skew fields, Arakelov theory
  - **Non-Archimedean Geometry** : p-adic cohomology, Berkovich spaces
  - **Shimura Varieties,** automorphic forms
  - **Effective algebra,** cryptography, elementary number theory
- Major scientific contributions
  - **Drinfeld Modules (2022) :** Anglès, Ngo Dac, Tavares Ribeiro, *"A class formula for admissible Anderson modules*" - Inventiones Mathematicae
  - **Rigid cohomology (2025)** : Ertl, Vezzani, *"Berthelot's conjecture via homotopy theory*" - Duke Mathematical Journal



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SCIENTIFIC FOCUS

MA Team :
Modeling & Applications

- Research Areas
  - Probability, statistics, optimization, data analysis, networks, graphs, polytopes
  - Mathematical and numerical analysis of PDEs, robustness of methods, relevance of models for applications
  - Mechanics, numerical simulation, multiscale modeling, multiphysics simulation
- Major scientific Contributions
  - **Metabolic Modeling (2026) :** Girardin, Grente, Niquil, Regnault, *"Comparing and Updating R Packages Using MCMC Algorithms for Linear Inverse Modeling of Metabolic Networks"* - Communications in Statistics Simulation and Computation
  - **Multiphysics Simulations (2025)** : Nacro, Karamian-Surville, Levacher, Hussain, *"Experimental and modeling study on earthen sediment-based bricks with and without flax fibers: A finite element analysis"* - Results in Engineering



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SCIENTIFIC POSITIONING

DCM Team :
Outreach & Education Programs

- Activities
  - **Local:** RJMI (girls), MathC2+ workshops, Math Week, etc.
  - **Regional:** Normandy popular science seminar, FENO, etc.
  - **National:** AuDiMath, Animath, Fabrikathon, etc.
  - **International:** Math'émerveille (Lausanne), Comprendre pour aimer (Dakar), etc.
- Unifying Nature

  This is a cross-functional team comprising lab members who are actively involved in activities to promote mathematics.



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LEARNING THROUGH RESEARCH

➢ **Bachelor Degrees**

- General Mathematics
- Mathematics and Computer Science Applied to Humanities and Social Sciences
- Mechanical Engineering

➢ **Masters**

- Mathematics
  - General Mathematics Track
  - Applied Statistics and Decision Analysis Track
- Mechanical Engineering

➢ **Phds**



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LMNO-RIMS Partnership

Current Research Synergies & Collaborations

AHGT International Research Network (RIN) - **Key Network**
Franco-Japanese network *"Arithmetic & Homotopic Galois Theory"* coordinated by **RIMS** and Lille.
• **Bruno Deschamps**: Core Member | **Jérôme Poineau:** Research Partner.
• **June 2027**: major workshop at RIMS – Ties with Shu Kawaguchi and Benjamin Collas

Algebra, Representations & p-adic Cohomology **(TNGA & GRAAL)**
• **Daniel Caro**: Strong ties with Atsushi Shiho (University of Tokyo), Tomoyuki Abe (Kavli IPMU), and Nobuo Tsuzuki (Sendai). Visited them and hosted them in Caen. Hosted Yuanmin Liu (Shiho's PhD student) at LMNO for a month in 2025.
• **Bernard Leclerc**: Historical links (M. Kashiwara, S. Kato, R. Fujita). Active research with Kota Murakami (Kyoto, visiting LMNO for 3 weeks ; will spend 2 years in France under a JSPS fellowship).

Algebraic & Low-Dimensional Topology **(GRAAL)**
• **Arthur Soulié**: Joint projects with Nariya Kawazumi and Mai Katada (University of Tokyo), and A. Takano (Osaka University).
• *Key Focus:* Mapping class groups, low-dimensional topology, and homological stability.

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LMNO-RIMS Partnership

Future Strategic Pathways

Reciprocal "Visiting Scholar" Programs

Leverage the **AHGT network** momentum to host Kyoto faculty members (e.g., S. Kawaguchi, B. Collas) at Caen, and encourage junior LMNO researchers' visits to Japan.

PhD Student & Postdoc Mobility

Perpetuate reciprocal visits (such as Y. Liu and K. Murakami). Streamline applications to bilateral CNRS-JSPS grants and post-doctoral fellowship exchanges.

Joint Workshops & Summer Schools

Turn the **June 2027 RIMS Workshop** into a launchpad for recurring bilateral summer schools focusing on algebraic geometry, topology, and number theory.



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Thank you very much
ご清聴ありがとうございました

We look forward to deep academic exchange and cooperation between Caen (LMNO) and Kyoto (RIMS).



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