

7th International Conference on
**GEOMETRIC SCIENCE
OF INFORMATION**
GSI'25
Saint-Malo, France
29th to 31st October 2025

From Classical to Quantum Information Geometry



Photo report
GSI'25
Geometric Science of Information
<https://conference-gsi.org/>



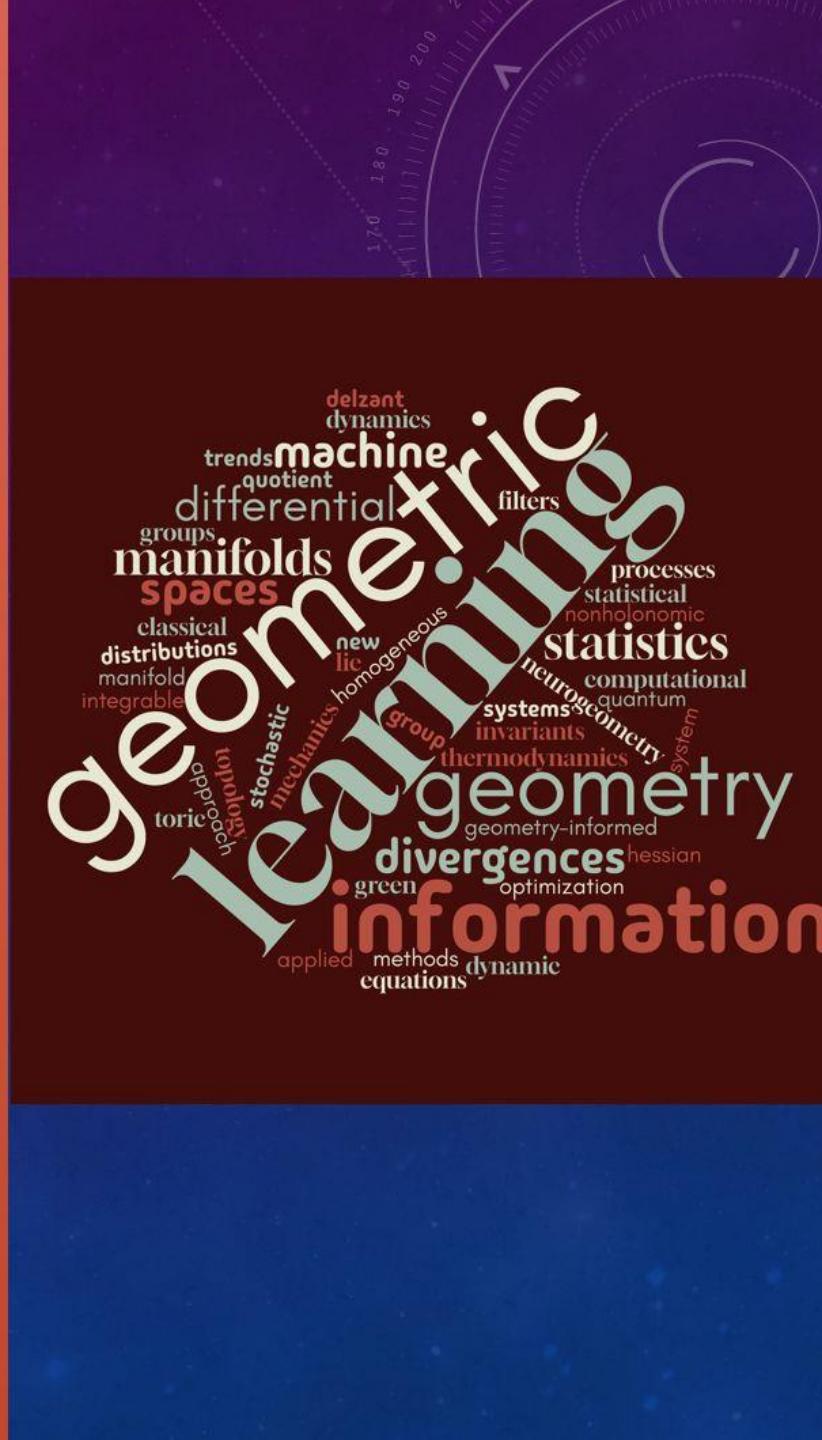


GSI'25 Conference

7th Conference from Classical to Quantum Information Geometry

The GSI'25 conference was structured in 18 sessions of more than 120 papers:

1. Geometric Learning and Differential Invariants on Homogeneous Spaces
 2. Statistical Manifolds and Hessian information geometry
 3. Applied Geometry-Informed Machine Learning
 4. Geometric Green Learning on Groups and Quotient Spaces
 5. Divergences in Statistics and Machine Learning
 6. Geometric Statistics
 7. Computational Information Geometry and Divergences
 8. Geometric Methods in Thermodynamics
 9. Classical & Quantum Information, Geometry and Topology
 10. Geometric Mechanics
 11. Stochastic Geometric Dynamics
 12. New trends in Nonholonomic Systems
 13. Learning of Dynamic Processes
 14. Optimization and learning on manifolds
 15. Neurogeometry
 16. Lie Group in Learning Distributions & in Filters
 17. A geometric approach to differential equations
 18. Information Geometry, Delzant Toric Manifold & Integrable System



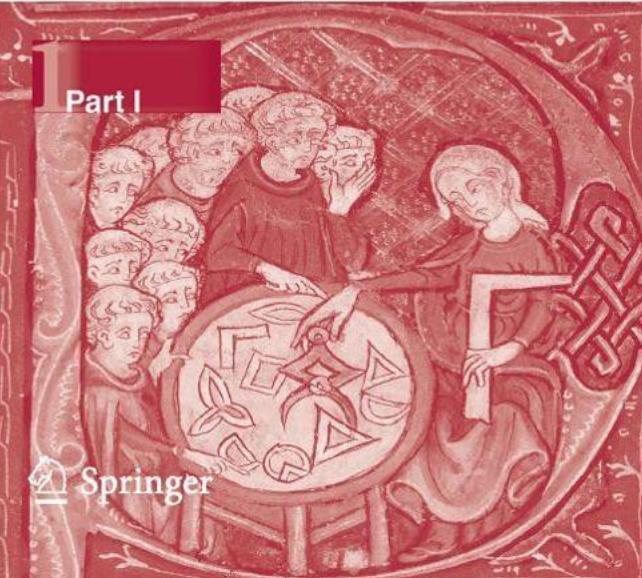
Proceedings

Frank Nielsen
Frédéric Barbaresco (Eds.)

LNCS 16033

Geometric Science of Information

7th International Conference, GSI 2025
Saint-Malo, France, October 29–31, 2025
Proceedings, Part I

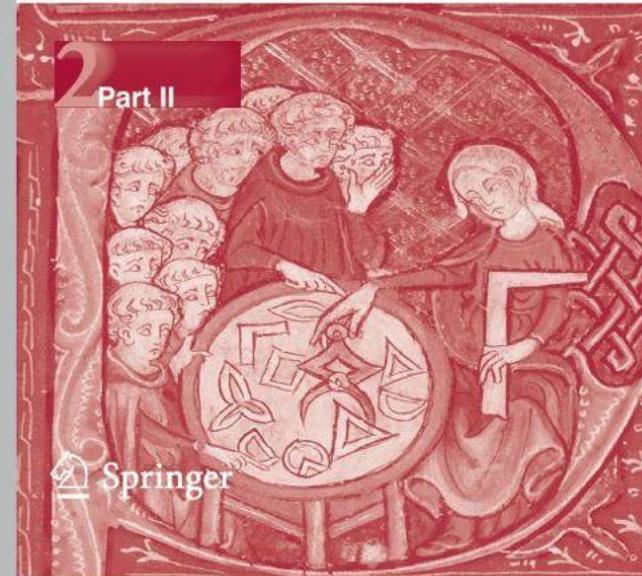


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Proceedings, Part II

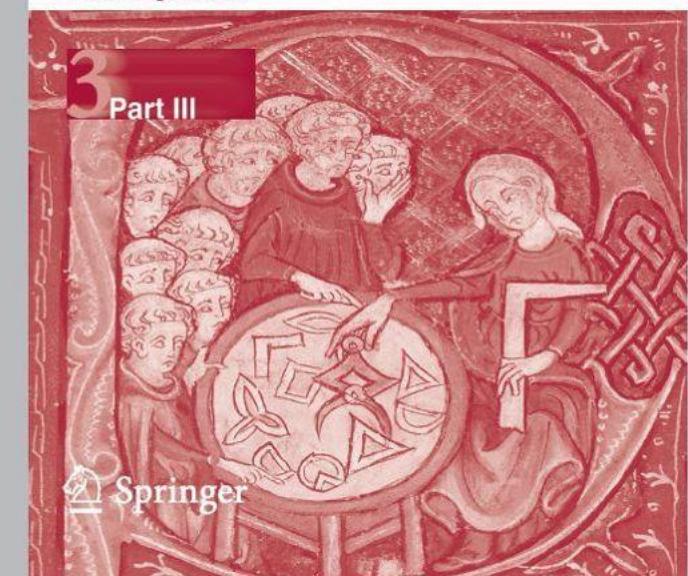


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Frédéric Barbaresco (Eds.)

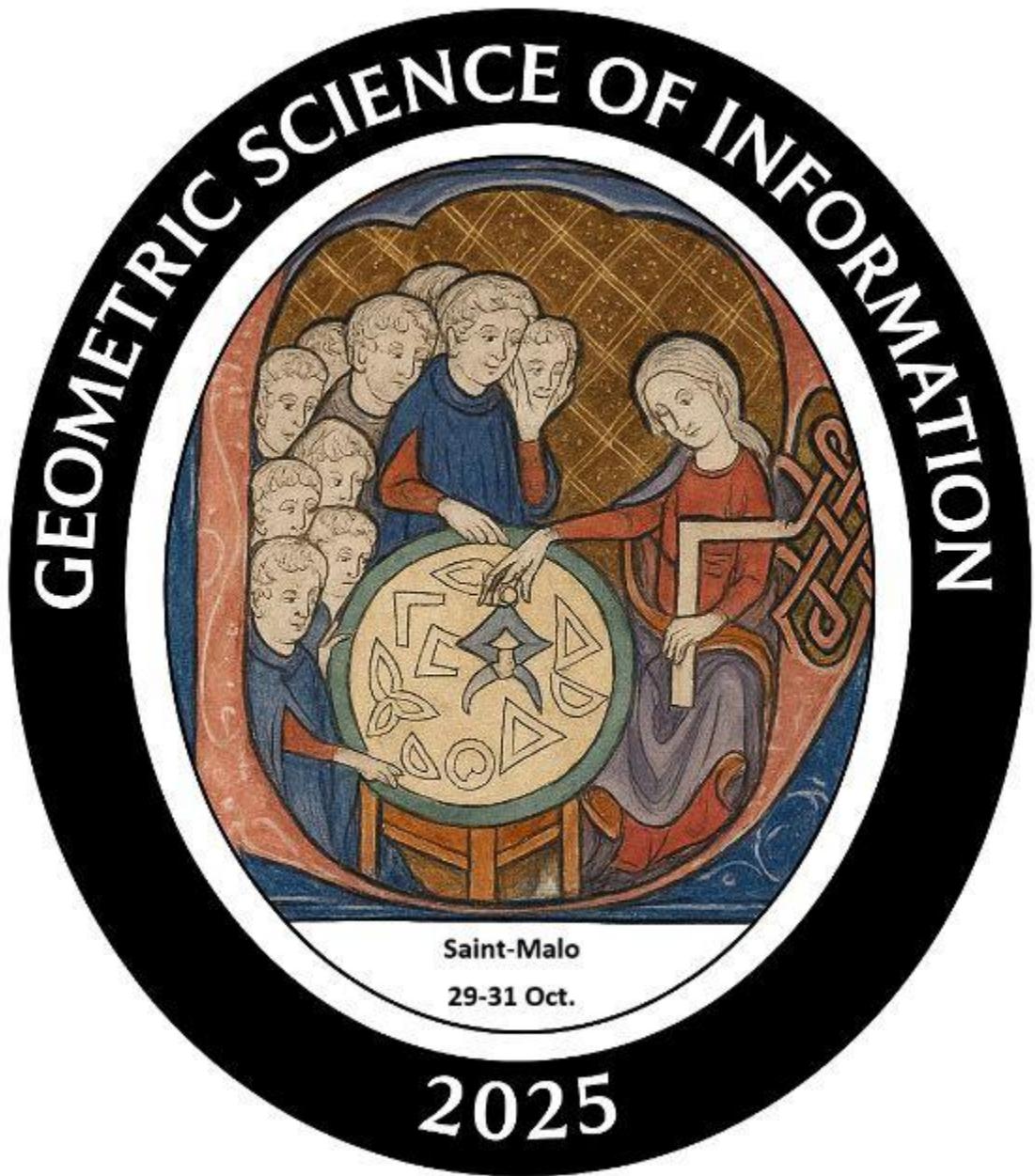
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Saint-Malo, France, October 29–31, 2025
Proceedings, Part III

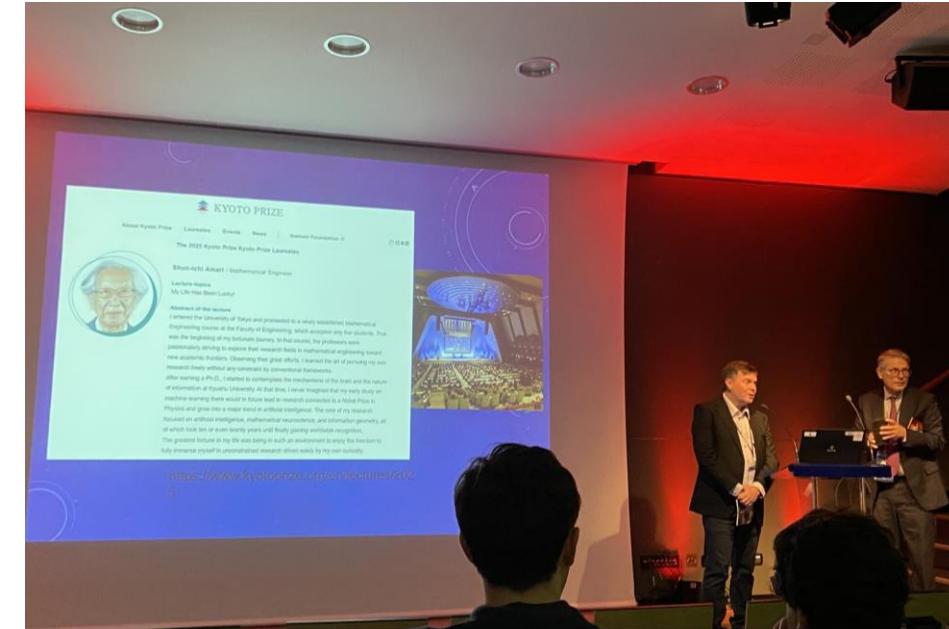
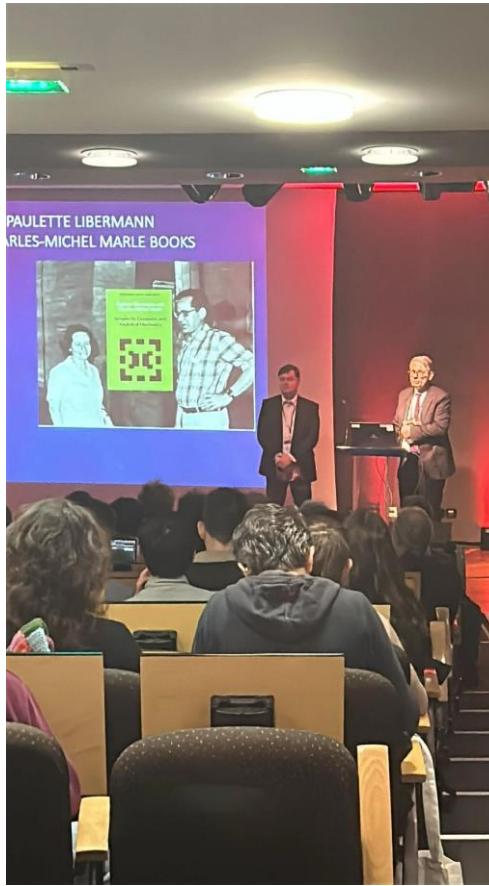


Springer Nature LNCS [vol 16033](#), [vol 16034](#), [vol 16035](#).



Opening session

Slides: <https://franknielsen.github.io/GSI/SEE-GSI'25-Opening.pdf>





From Classical to Quantum Information Geometry

KEYNOTES:



Prof. Nina MIOLANE

Assistant Professor, AI, UC Santa Barbara.
Co-Director, AI Center, Bowers Women's Brain
Health Initiative, Affiliate, Stanford SLAC

*Topological Deep Learning: Unlocking
the Structure of Relational Systems*



Philip J. MORRISON

The University of Texas at Austin,
Physics Department

*Metriplectic Dynamics: A Geometrical Framework for
Thermodynamically Consistent Dynamical Systems*



Mário A.T. FIGUEIREDO

Instituto de Telecomunicações and Instituto Superior
Técnico Universidade de Lisboa, Portugal

*Extended Variational Learning
via Fenchel-Young Losses*



Rita FIORESI

FaBiT, University of Bologna, Italy

*A Noncommutative perspective of Graph Neural
Networks*



Alice LE BRIGANT

Université Paris 1 Panthéon-Sorbonne

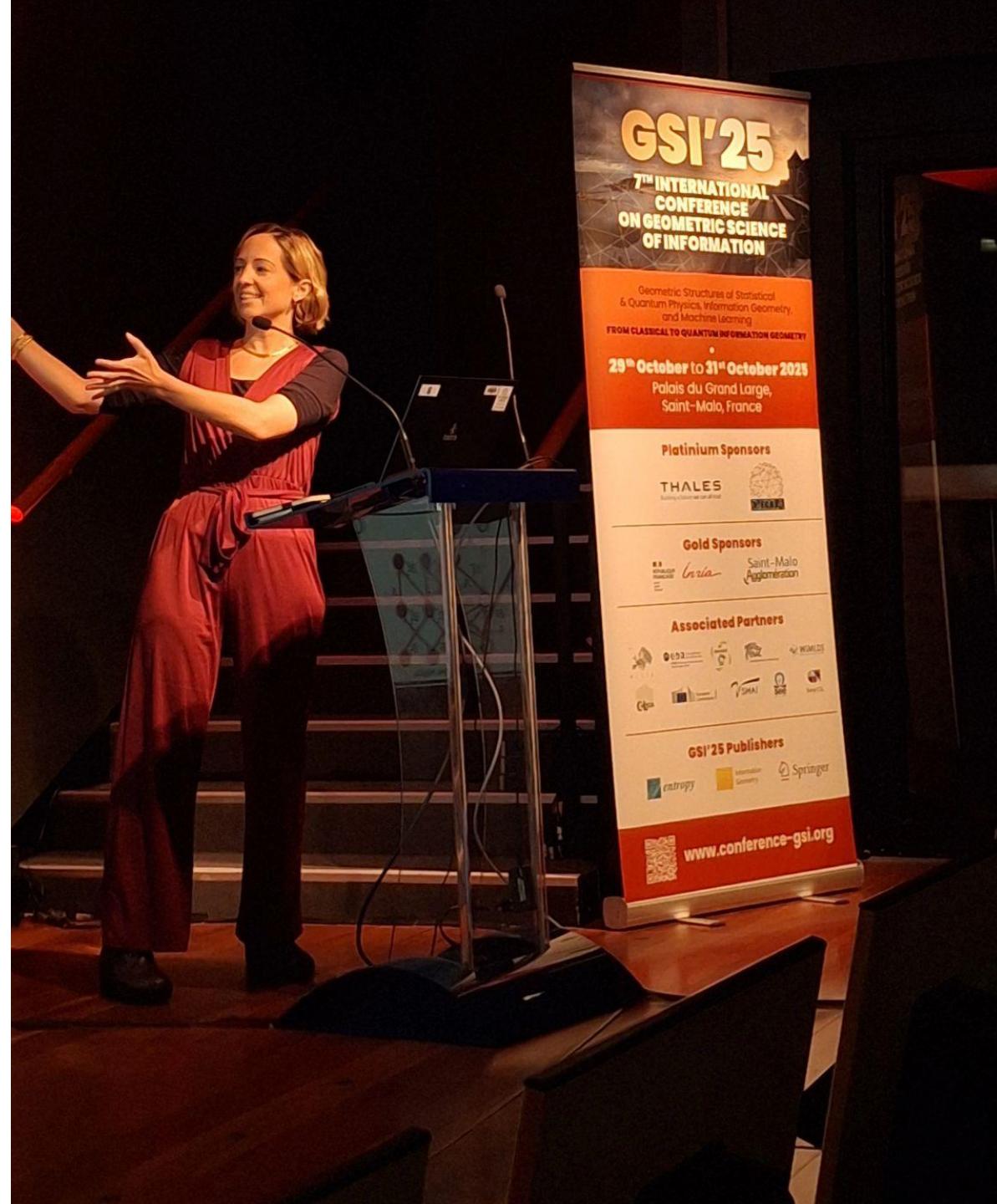
*The L^p Fisher-Rao metrics a
nd the alpha-connections*



Frédéric BARBARESCO

THALES, Campus de Paris-Saclay, Palaiseau, France

*Bicentenary of Thermodynamics and Sadi Carnot's
Seminal Work: From Constantin Carathéodory's
Contact Geometry Model to Jean-Marie Souriau's
Symplectic Foliation Structure*

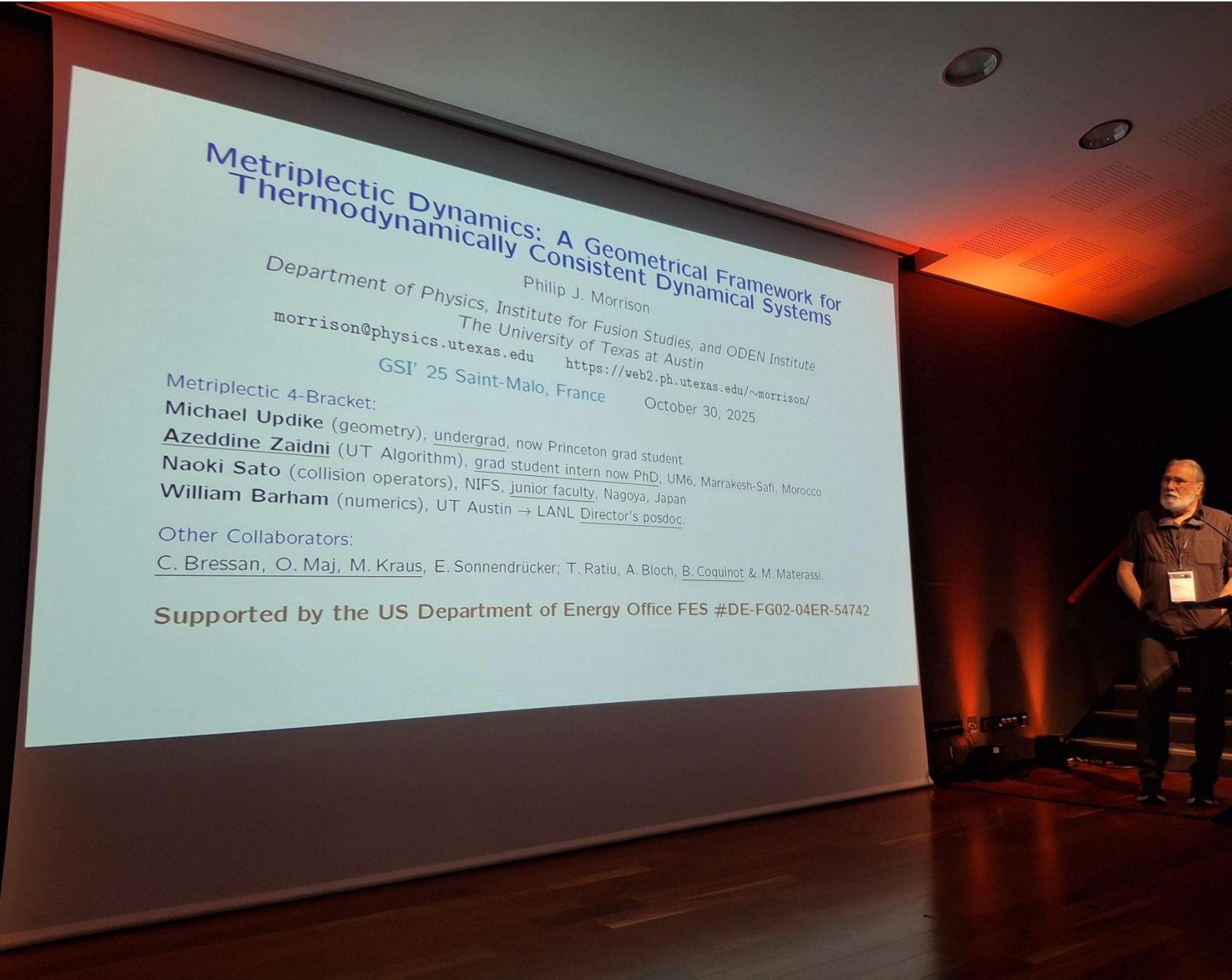


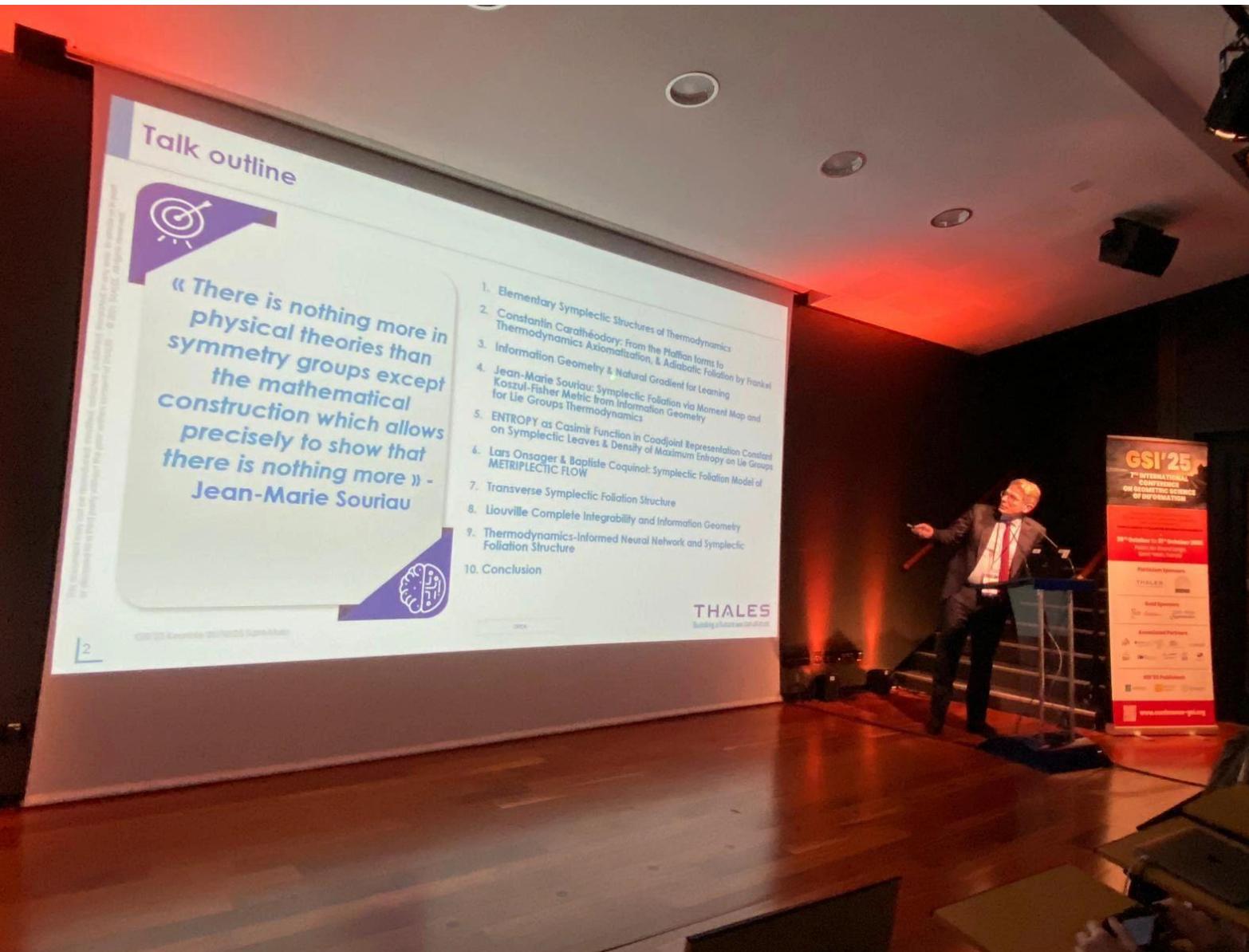
Non parametric information geometry: the L^p -Fisher-Rao metrics and the α -connections

Alice Le Brigant
SAMM, University Paris 1
Joint work with Martin Bauer, Yuxiu Lu and Cy Maor

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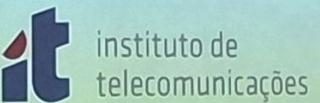






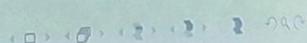
Extended Variational Learning via Fenchel-Young Losses

Mário A. T. Figueiredo
... with Sophia Sklaviadis and André F. T. Martins

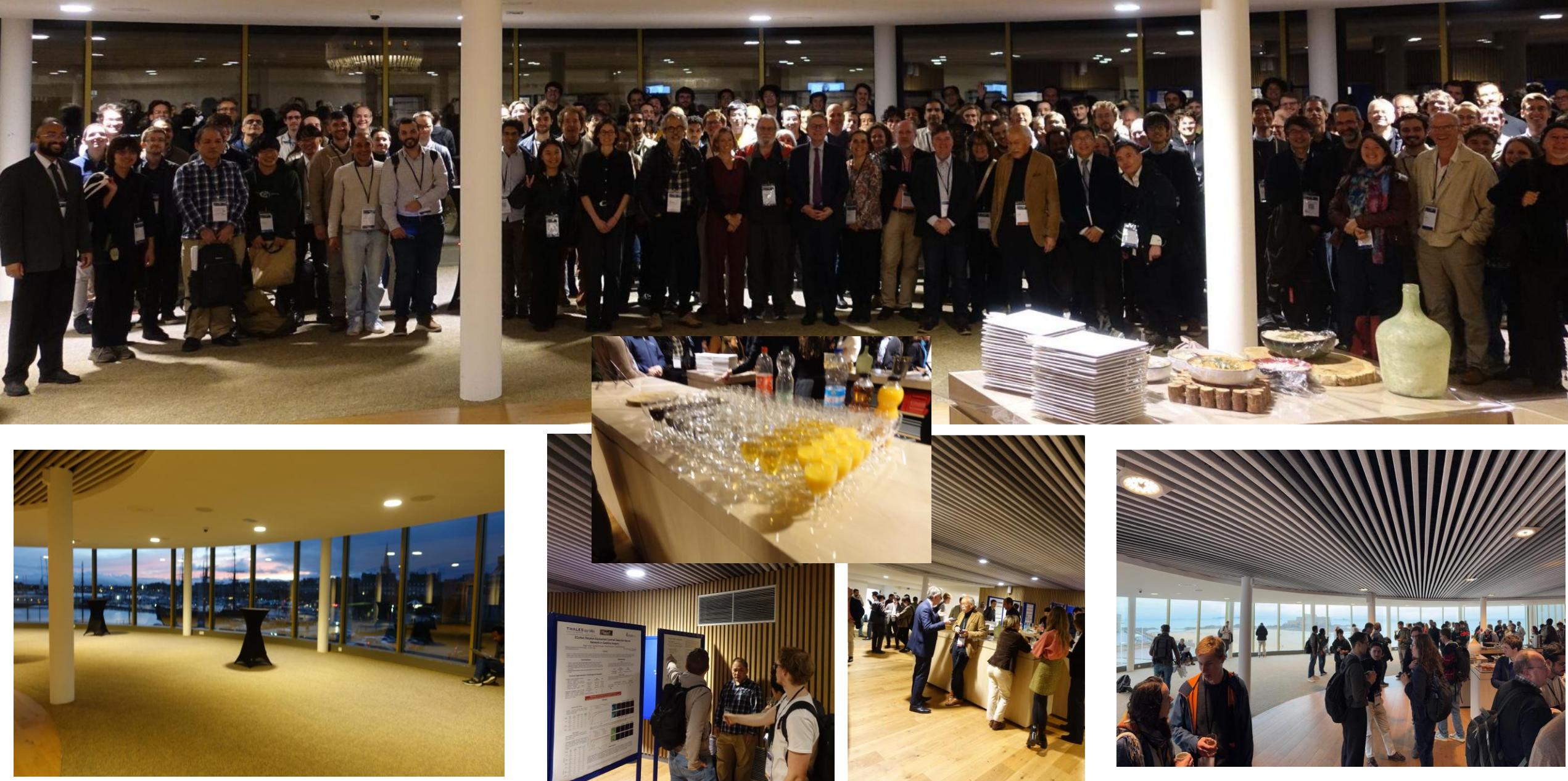


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Cocktail reception in La Rotonde



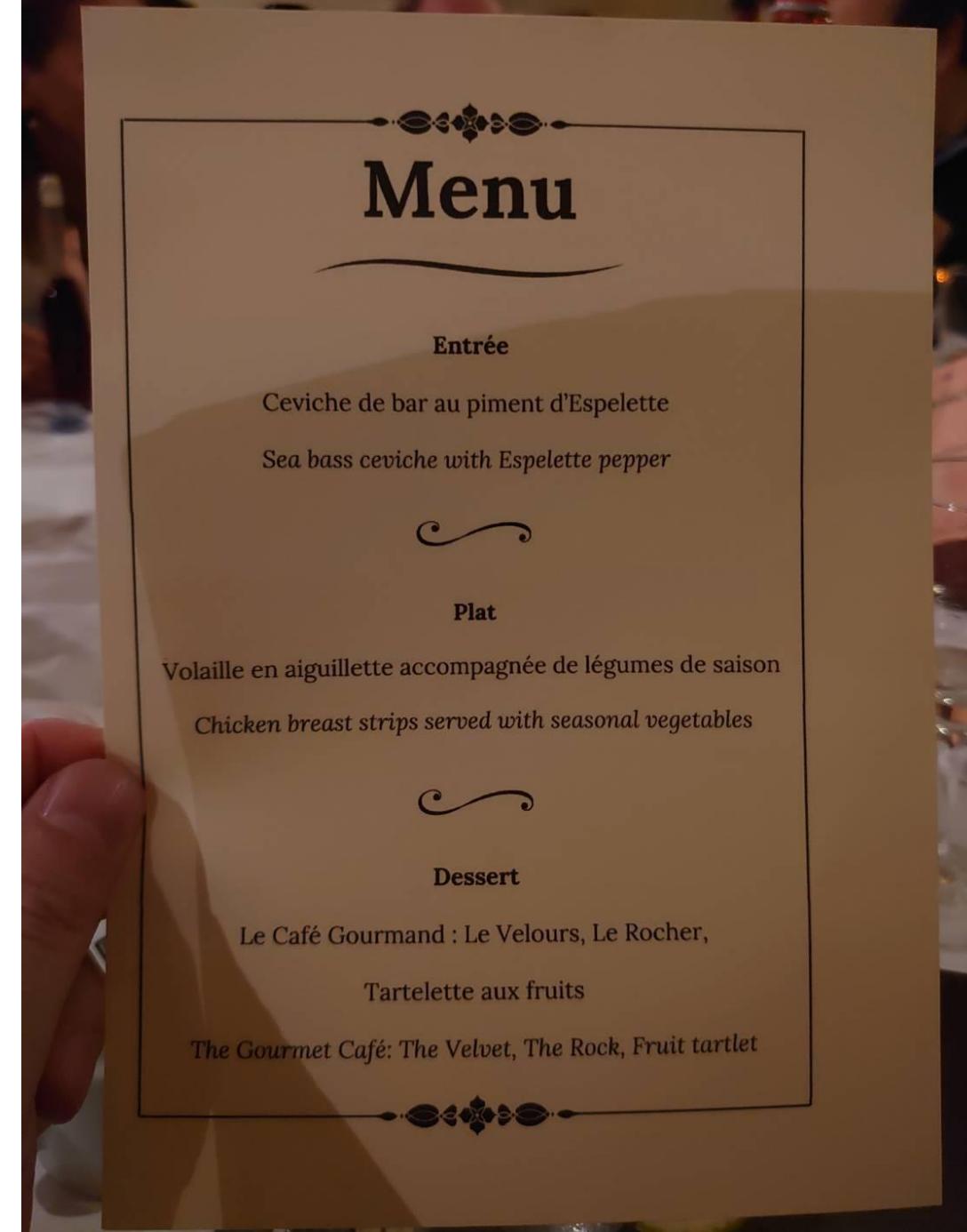
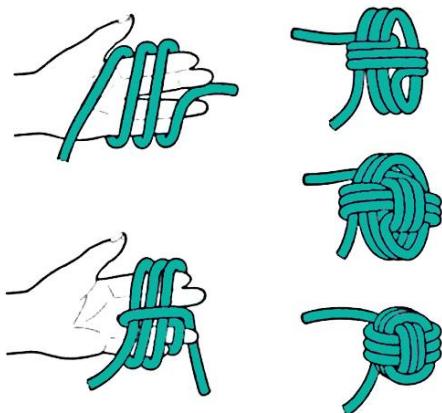


Group photo in Mautpertuis Auditorium



Demeure du Corsaire









Paper Awards

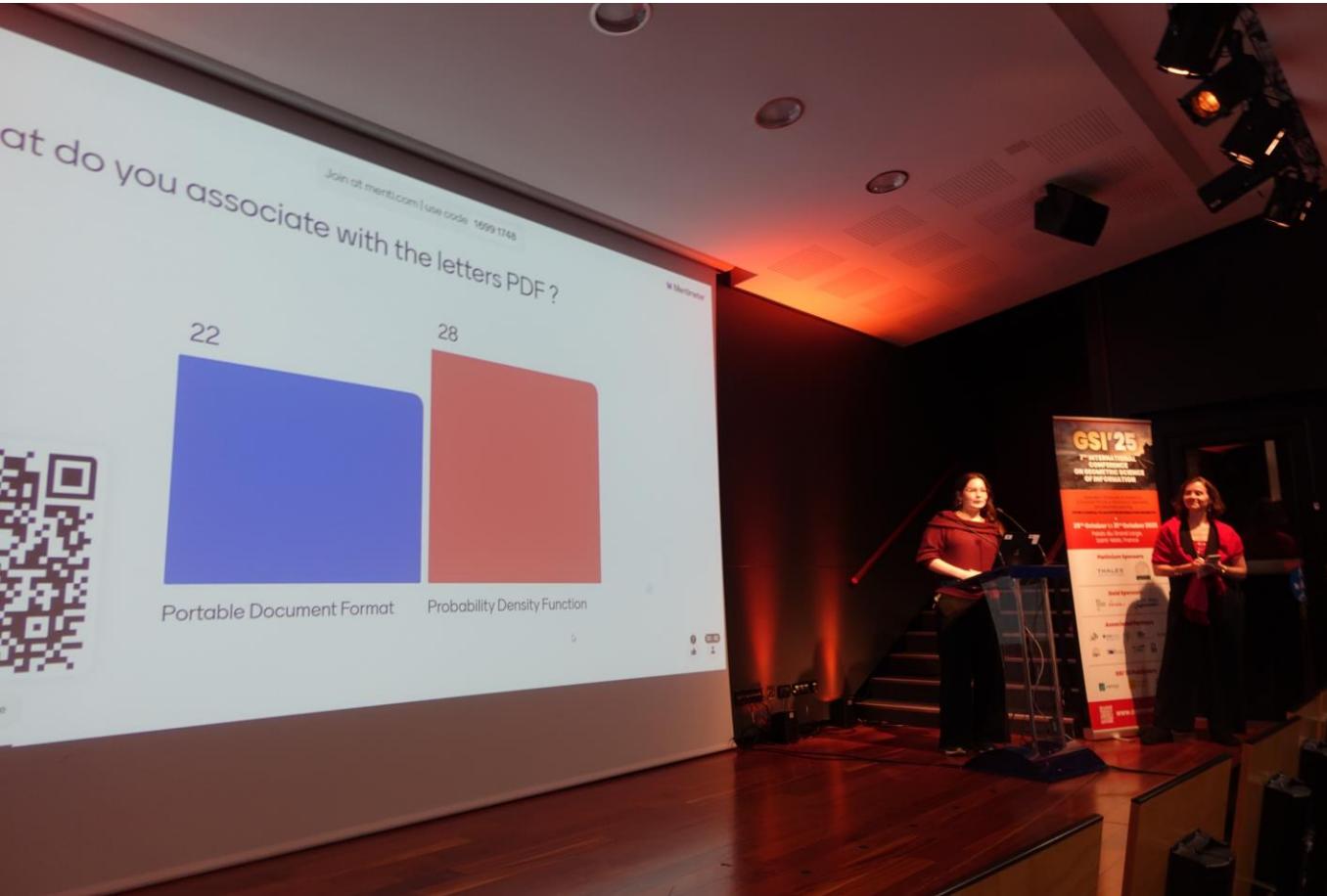
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Best Student Paper Award

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Ines Garcia-Redondo, Anthea Monod, Qiquan Wang



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AUTHORS OF THE
PAPER
*Confidence Bands for Multiparameter
Persistence Landscapes*

Frank Nielsen
Sony Computer Science Laboratories, Japan
General co-chair
Alice Barbora Tumpach
Lille University, France
CNRS Pauli Institute,
Austria
Prize committee, President

Frédéric Barbaresco
Thales, France
General co-chair





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Thales, France
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Best Paper Award

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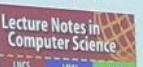
AUTHOR OF THE PAPER

*A new symmetry group for Physics to revisit the
Kaluza-Klein theory*

Frank Nielsen
Sony Computer Science Laboratories, Japan
General co-chair



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Geometric Structures of Statis-
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FROM CLASSICAL TO QUANTUM INFORMATION

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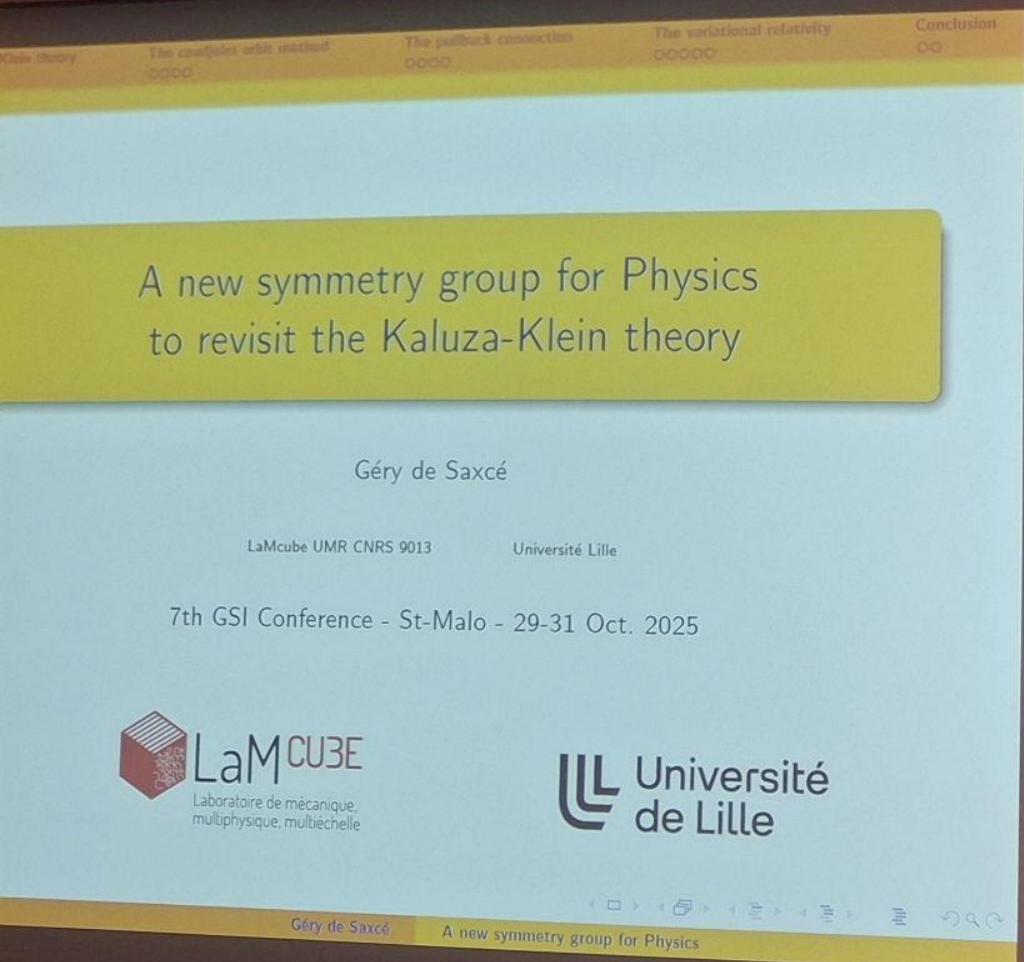
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**The 7th international conference on
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Best Paper Award**

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*A new symmetry group for Physics to revisit the
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A Historical Perspective on the Schützenberger-van-Trees Inequality: A Posterior Uncertainty Principle



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Julia Lange, Bartosz Zawora

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Reduction of exact symplectic manifolds and energy hypersurfaces



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CATEGORY: Marvelous Presentation

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Geometry of Cells Sensible to Curvature and Their Receptive Profiles

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CATEGORY: Fundamental Tools

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Universal kernels via harmonic analysis on Riemannian symmetric spaces

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GSI Achievement Award

Recognizing outstanding achievement in geometric science of information

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Senior Research Scientist
INRIA, Sophia-Antipolis, France

Frédéric Barbaresco
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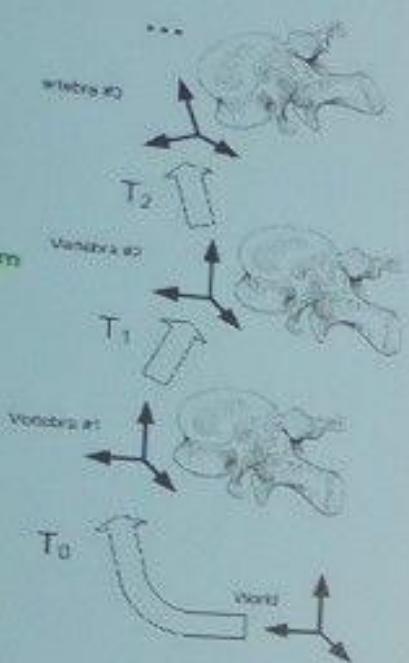
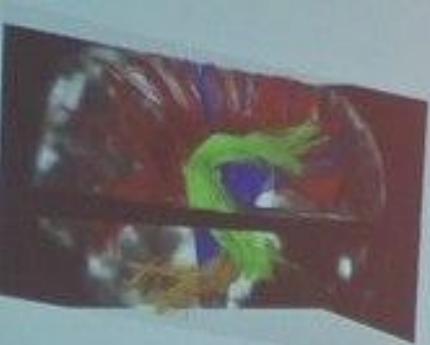
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The logo for GSI 2025 features a stylized blue and white symbol resembling a globe or a network, with the letters "GSI" integrated into it. Below the symbol, the text "since 1883" is visible. To the right of the symbol, the text "GSI 2025" is printed in bold, followed by "October 29th-31st 2025" and "Saint-Malo, France".



3.



GSI'25
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Geometric Structures of Statistical & Quantum Physics, Information Geometry, and Machine Learning
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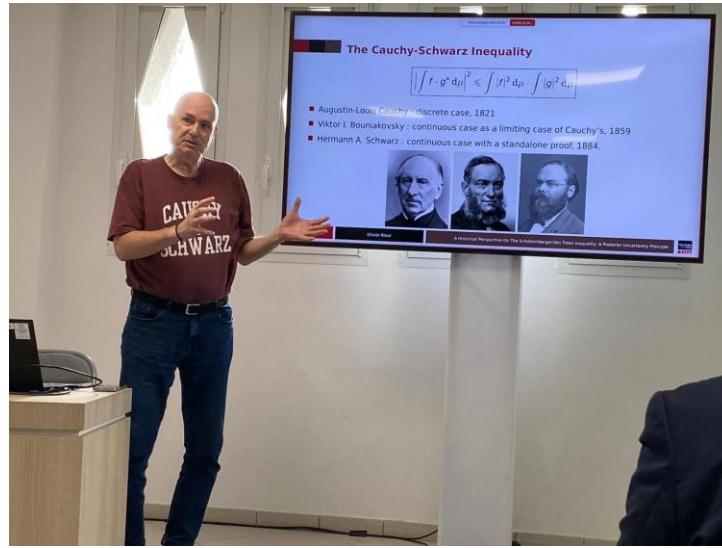
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Souvenirs from Saint-Malo



Closing session

Slides: <https://franknielsen.github.io/GSI/SEE-GSI'25-Closing.pdf>





See you in 2027!

Photo report prepared by Frank Nielsen
with photos from various sources!

<https://franknielsen.github.io/GSI/>

