Conference Co-chairs:
- Frank Nielsen
- Sony CSL, Japan
- Ecole Polytechnique, France
- Frédéric Barbaresco
- President of ESSIC Club Ingénierie des Systèmes d’Information et de Communications
- Thales Land & Air Systems, Limours, France

Local organizing committee:
- Stéphane Puechmorel
  - Scientific advisor, ENAC, Toulouse France
- Fabrice Gamboa
  - Statistics & Probability Team
- Institut Mathématique de Toulouse, France
- Florence Nicol
  - ENACLab, DEVI research team, ENAC, Toulouse France
- Alice Le Brigant
  - ENACLab, DEVI research team, ENAC, Toulouse France

Secretariat:
- Mrs. Valérie ALIDOR
  - SEE, France.Tel.: + 33 (0) 1 56 90 37 02

Internet web page: www.gsi2019.org

Scientific Committee (To be consolidated)

First announcement and call for papers

As for GSI’13, GSI’15 and GSI’17, the objective of this SEE GSI’19 conference, hosted in Toulouse at ENAC, is to bring together pure/applied mathematicians and engineers, with common interest for Geometric tools and their applications for Information analysis.

It emphasizes an active participation of young researchers to discuss emerging areas of collaborative research on “Geometric Science of Information and their Applications”. Current and ongoing uses of Information Geometry Manifolds in applied mathematics are the following: Advanced Signal/Image/Video Processing, Complex Data Modeling and Analysis, Information Ranking and Retrieval, Coding, Cognitive Systems, Optimal Control, Statistics on Manifolds, Topology/Machine/Deep Learning, Artificial Intelligence, Speech/sound recognition, natural language treatment, Big Data Analytics, Learning for Robotics, etc., which are substantially relevant for industry.

The Conference will be therefore held in areas of mutual interest with the aim to:
- Provide an overview on the most recent state-of-the-art research
- Exchange mathematical information/knowledge/expertise in the area
- Identify research areas/applications for future collaboration

This conference will be an interdisciplinary event and will unify skills from Geometry, Probability and Information Theory. Proceedings are published in Springer’s Lecture Note in Computer Science (LNCS) series. SPRINGER will sponsor Best paper Award GSI’19.

Gala Diner will take place at Hôtel-Dieu Saint-Jacques in Salle Des Colonnes.

Important Dates:
- Deadline for 8 pages SPRINGER LNCS format: 18th of February 2019
- Notification of acceptance: 22nd of April 2019
- Final paper submission: 15th of June 2019

Paper templates and Guideline on GSI’19 website at “Author Instructions”

Topics of interests include but are not limited to:
- Probability on Riemannian Manifolds
- Optimization on Manifold
- Shape Space
- Statistics on non-linear data
- Lie Group Machine Learning
- Harmonic Analysis on Lie Groups
- Statistical Manifold & Hessian Information Geometry
- Monotone Embedding in Information Geometry
- Non-parametric Information Geometry
- Computational Information Geometry
- Divergence Geometry
- Optimal Transport
- Geometric Deep Learning
- Geometry of Hamiltonian Monte Carlo
- Information Topology
- Geometric & (Poly)Symplectic Integrators
- Geometric structures in thermodynamics and statistical physics
- Contact Geometry & Hamiltonian Control
- Geometric and structure preserving discretizations
- Geometry of Quantum States
- Geodesic Methods with Constraints
- Probability Density Estimation & Sampling in High Dimension
- Geometry of Graphs and Networks
- Distance Geometry
- Geometry of Tensor-Valued Data
- Geometric Mechanics
- Geometric Robotics & Learning
- Geometry in Neuroscience & Cognitive Sciences

A special session will deal with:
- Geometric Science of Information Libraries (geomstats, pyRiemann, …)

Programmation of Invited Speakers: