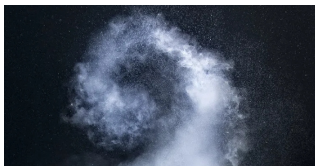


# Random patterns and structures in spatial data through probabilistic modelling and Bayesian inference

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Université de Lorraine

IECL: Institut Elie Cartan de Lorraine

Few words about myself ...

... and about my Estonian life ...

## Université de Lorraine: statistics evaluation report 2022

- ▶ present date of birth: the 1st of January 2012 - but its history goes back to XVIth century
- ▶ number of students: 69 686
- ▶ faculty staff: 4078
- ▶ administrative staff: 3097
- ▶ budget: 620 Meuros
- ▶ multi-site: main campuses in Nancy and Metz, but also throughout the entire region of Lorraine

The Université de Lorraine teaches and conducts research in all disciplines except ... **astronomy** ...

## IECL - Institut Elie Cartan de Lorraine:

- ▶ founded in 1953 by Jean Delsarte (one of the founders of the Bourbaki seminar)
- ▶ Jean Delsarte attracted famous mathematicians to come at Nancy: **Laurent Schwartz**, **Roger Godement** ...
- ▶ the institute has two supervisory boards: **Université de Lorraine** and **CNRS** (The National Centre for Scientific Research )
- ▶ close cooperation with **Inria** (French national institute for research in digital science and technology)
- ▶ structured in four research teams
  - ▶ analysis and number theory: 35
  - ▶ PDE and applications: 33
  - ▶ geometry: 23
  - ▶ **probability and statistics**: 35
- ▶ two sites: Nancy and Metz

## People working at IECL: statistics evaluation report 2022

- ▶ faculty (permanent) staff: 126 (full professors, associates professors, senior and junior researchers)
- ▶ administrative staff: 11
- ▶ phd students: 50
- ▶ post-docs: 3
- ▶ teaching assistants: 12

# Few words about myself ...

**Radu Stoica:** full professor in mathematics at Université de Lorraine - IECL

- ▶ **research interest:** pattern and structures detection and characterisation in spatial data through probabilistic modelling and Bayesian statistical inference
- ▶ **application domains:** astronomy, cosmology, geosciences and social networks
- ▶ **previous positions:** associate professor (Université de Lille), researcher (INRAE Avignon, Universitat Jaume I Castellon, CWI Amsterdam)
- ▶ **more details on my web page:**  
<https://sites.google.com/site/radustefanstoica/>

## ... and about my Estonian life ...

- ▶ **2003:** meet Enn Saar and Vicent Martinez in Valencia
- ▶ **2004/05:** our first paper together - Candy model and 2d simulated cosmological data
- ▶ **2005,07,10:** construction and publication of the Bisous model with Spanish mathematicians, and two papers that use Bisous model for detecting 3d filaments always with Enn and Vicent
- ▶ **2007:** my first visit at Tartu Observatory
- ▶ **2009:** invitation to Month of the French science in Estonia by French Embassy in Estonia - two public conferences and radio interview (Priit Ennet from Vikerradio)
- ▶ **2011:** Enn Saar presents me a young brilliant scientist Elmo Tempel ...

- ▶ ... I do not remember exactly when: I explore the corridors of the new modern building of the Tartu Observatory ...
- ▶ 2012: project PICS CNRS (scientific cooperation between the Universities of Lille, Tartu and Valencia) - visit in Lille of Maret Einasto, Vicent Martinez, Enn Saar and Elmo Tempel and workshop “Mathematics and Cosmology”
- ▶ 2014: build an Erasmus cooperation (Universities of Lille and Tartu): I gave a course in spatial statistics and point processes at Tartu Observatory and University (important support of Peeter Tenjes)



- ▶ **2014:** Tracing the Cosmic Web workshop at Lorentz Center (Leiden) - meet Rien van de Weijgaert and Noam Libeskind
- ▶ **2015:** visit of Rain Kipper and his young family in Lille
- ▶ **2016:** PHC Parrot program: cooperation Estonia and France (Elmo Tempel and Radu Stoica)
- ▶ **around this period:** Elmo and Radu become full professors - the phd thesis of Maarja Bussov (directors: Elmo Tempel, Peeter Tenjes and myself)
- ▶ **2018:** Statistics of the largest scales - workshop organised in honor of Enn Saar

- ▶ meanwhile after visits in France and Estonia and some Tartu-Tuorla meetings: I played for Finland once ...
- ▶ ... and after many “philisophical symposiums”, sauna meetings and also some published papers (more than five): Elmo Tempel becomes the youngest Estonian Academician being the mathematical proof that my first quality is the excellence of my friends
- ▶ 2024: EXCOSM Twinning project starts - coincidence?



Figure: Creation by Laurent Ballesta. Winner of the Wildlife Photographer of the Year 2021. Royal Ontario Museum.