

IN2P3 School of Statistics 2024

Yann Coadou

CPPM Marseille

Carry-le-Rouet, 13 May 2024



SOS
School of Statistics

IN2P3 School of Statistics 2024

May 13-17 Carry-le-Rouet

Scientific Programme

Courses

- Basic concepts of statistics: Romain Madar (LPCA, Clermont-Ferrand)
- Classical interval estimation, limits, systematic and beyond: Adrinda de Wit (LLR, Palaiseau)
- Bayesian statistics: Leïla Haegel (IP2I, Lyon)
- Unfolding: Philippe Gras (CEA/IRFU, Saclay)
- Introduction to machine learning: Vincent Barra (LPCA, Clermont-Ferrand)
- Performance metrics: Boosted decision trees: Yann Coadou (CPPM, Marseille)
- Introduction to deep learning: Florian Ruppán (Université Lyon 1 - IP2I)
- Advanced deep learning: Tobias Gollig (Université de Genève)
- Simulation based inference: Cyrille Doux (LPSC, Grenoble)

Hands on sessions

- Statistics: Adrinda de Wit (LLR, Palaiseau)
- Introduction to machine learning tools: David Rousseau (IJCLab, Orsay)
- Advanced machine learning: Florian Ruppán (Université Lyon 1 - IP2I)

Organizing Committee

- Johan Bregeon (LPSC, Grenoble)
- Eric Osherson (IPHC, Strasbourg)
- Yann Coadou (CPPM, Marseille, chair)
- Sabine Crépe-Renaudin (LPSC, Grenoble)
- Leïla Haegel (IP2I, Lyon)
- Emille Ishida (LPCA, Clermont-Ferrand)
- Romain Madar (LPCA, Clermont-Ferrand)
- Guillaume Mention (CEA/IRFU, Saclay)
- David Rousseau (IJCLab, Orsay)

Administrative Support
Angélique Pèpe (CPPM, Marseille)

<https://indico.in2p3.fr/e/sos2024>

- 9th edition of successful biennial series
 - ▶ <https://sos.in2p3.fr>
- Strasbourg (2008), Autrans (2010–2016), La Londe-les-Maures (2018), Zoom (2021), Carry (2022)
- Organising committee (**on site**):
 - Johan Bregeon (LPSC Grenoble)
 - **Éric Chabert (IPHC Strasbourg)**
 - **Yann Coadou (CPPM Marseille) [chair]**
 - Sabine Crépe-Renaudin (LPSC Grenoble)
 - **Leïla Haegel (IP2I Lyon)**
 - Emille Ishida (LPCA, Clermont-Ferrand)
 - **Romain Madar (LPC Clermont-Ferrand)**
 - Guillaume Mention (CEA/IRFU Saclay)
 - **David Rousseau (IJClab Orsay)**
- Administrative support: Angélique Pèpe (CPPM, Marseille)

▶ <https://indico.in2p3.fr/e/SOS2024>

- *“Give an overview of the concepts and tools used in particle physics, astro-particle physics and cosmology when probabilities and statistics come to play”*
- Machine learning part increased in past years
- Financial support:



- Technical and administrative support from CPPM

Allows to welcome 50 participants and 10 lecturers

This school is for you!

- Do not hesitate to ask questions, during and in-between lectures
- Nice and relaxing place
⇒ **encourage interactions**



- Three main components
 - Fundamental concepts
 - Multivariate analysis (machine learning)
 - Hands-on sessions

	Mon 13	Tue 14	Wed 15	Thu 16	Fri 17
9:00-10:30	Arrival	<i>Adinda de Wit</i> Intervals & limits I	<i>Vincent Barra</i> Machine learning	<i>Leïla Haegel</i> Bayesian statistics	<i>Philippe Gras</i> Unfolding
10:30-11:00		Break			
11:00-12:30		<i>Adinda de Wit</i> Intervals & limits II	<i>Yann Coadou</i> Boosted decision trees; Metrics	<i>Florian Ruppin</i> Deep learning introduction	<i>Cyrille Doux</i> Simulation based inference
12:30-14:00	Lunch				
14:00-15:30	<i>Romain Madar</i> Basic concepts I	<i>Adinda de Wit</i> Hands-on: statistics	<i>David Rousseau</i> Hands-on: basics machine learning	<i>Florian Ruppin</i> Hands-on: Deep learning	Departure
15:30-16:00	Break		Free	Break	
16:00-17:30	<i>Romain Madar</i> Basic concepts II			<i>Tobias Golling</i> Advanced deep learning	

■ Food (Miléade times)

- breakfast: 7:30–9:00
- lunch: 13:00–14:00
- dinner: 20:00
- bar: 18:00–23:00

■ Wifi

- use the resort network
- apparently not working well in rooms. . .
- . . . so spend more time talking to each other at the bar!

■ Hands-on sessions

- You have of course already followed [instructions](#) before coming
- If not, do it today! Ask for help if necessary

■ Wednesday afternoon (free time after 15:30)

- Enjoy the resort's facilities: outdoor swimming pool (got your swimsuit, right?), sauna/hammam (I think), etc.
- Go for a hike/run along the coast or up the hills
- Go to the beach(es), explore underwater marine life (esp. Cap Rousset marine reserve)

■ Social dinner

- Thursday evening

■ Miscellaneous

- Certificate of attendance: sent to all participants after the school
- Evaluation form for feedback at the end of the week

EXPERIENCE SPORT & BIEN-ÊTRE **AMBIANCE CLUB** SOIRÉE

nda Miléade



Miléade

Villages Clubs & Hôtels

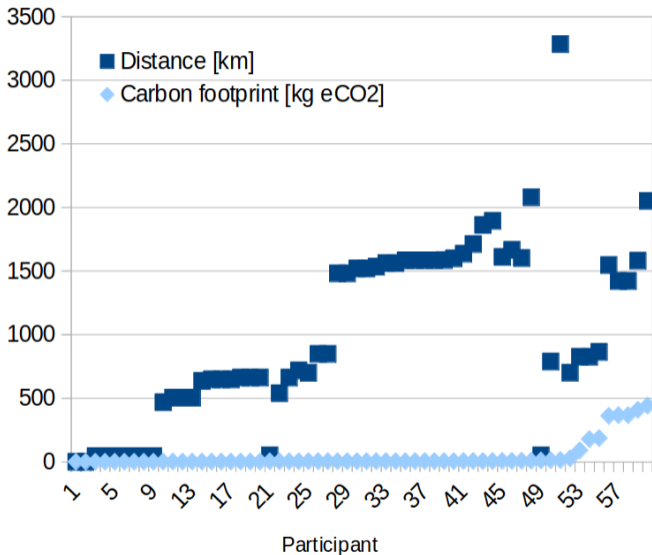
OS	LUNDI 13/05	MARDI 14/05	MERCREDI 15/05	JEUDI 16/05	VENDREDI 17/05
	Balade Sentier des Lézards Co-voiturage Rdv réception	Tournoi de Pétanque Terrain de Pétanque	EXCURSION MARSEILLE Départ 08h30 Sur inscription ! Rdv réception	Tournoi de Pétanque Terrain de Pétanque	Sacrée Balade (Temps Libre au Marché) Rdv réception
	Circuit training Solarium	Step Solarium	Renforcement Musculaire Bas du corps Solarium	Tabata Solarium	Renforcement Musculaire Abdos Solarium
	Aqua Fun Piscine	Aqua Fun Piscine		Aqua Fun Piscine	Aqua Fun Piscine
	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco
	Tournoi de Möllky Terrain de Pétanque	La Digestion de la Chapelle Rdv réception	Tournoi de Volley-Ball Terrain de Pétanque	Balade de La couronne Co-voiturage Rdv réception	Tournoi de Tennis de table Terrain Multisport
	Stretching Solarium	Stretching Solarium	Stretching Solarium	Stretching Solarium	Stretching Solarium
Mambo	Initiation danse Batchata Place Calanque	Démonstration Culinaire Rdv Bar	Initiation danse Cumbia Place Calanque	Initiation danse Kuduro Place Calanque	Initiation danse Jerusalem Place Calanque
	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco	Instant Miléade Bar le sirocco
ndre sa	Karaoké Bar	Le Grand Jeu National Salle Grand Large	Master Blind Test Bar Pétanque Nocturne Terrain de pétanque	Soirée Dansante Gala Rouge Bar	Miléade fait son Cabaret Salle Grand Large

me de vos vacances.

et retrouvez toutes les informations sur votre séjour.



- Total distance: 62600 km (1026 km on average)
- Total emissions: 3100 kCO₂e (50 kCO₂e) on average





School of **t**statistics