



MISS ABMS 2024

**MULTI-PLATFORM INTERNATIONAL
SUMMER SCHOOL ON AGENT-BASED
MODELING & SIMULATION FOR
RENEWABLE RESOURCES MANAGEMENT**

BOOKLET

Participants & Trainers

From 02 to 13 September 2024

Agropolis International, Montpellier (France)

PROFILE OF PARTICIPANTS

Mrs ALLEN Genevieve

genevieve.allen@su.se

Position: PhD Student

Discipline: Sustainability Science

Topic: The impacts of crisis on sustainability transformations, using qualitative case studies and agent-based modelling to investigate causal mechanisms.



M AMELLER Joaquin

joaquin.ameller@cirad.fr

Position: Researcher

Discipline: Agriculture and Food Economics

Topic: I specialise in economics applied to agriculture and food, with a focus on the optimisation and modelling of food flows. I am currently working on a literature review on food environments. I have just received funding for a project aimed at tracing food flows in Montpellier.



M BOYER Thomas

thomas.boyer@etu.univ-cotedazur.fr

Position: PhD Student

Discipline: Geography & Urbanism

Topic: How to integrate user behaviors, in terms of spatiality, mobility, and the use of public spaces, to promote the success of a 15-minute city policy through a network of densification axes in a peri-urban space?



M CHADLI Jalil

jalil.chadli@bonneuil94.fr

Position: Project manager

Discipline: Risk prevention

Topic: Study of group dynamics



Mrs DOSSA Hermeline Eliante Romualde Gbèdandé

hermelinedossa@gmail.com

Position: Phd Student

Discipline: Biodiversity Informatics

Topic: Scenario exploration using agent-based simulation for the collective search for sustainable, non-conflictual practices: application to conflict resolution between farmers and herders in Benin.



Mrs GIROT Emma

emma.girot@insa-lyon.fr

Position: Phd Student

Discipline: Urban hydrology

Topic: Development of a decision support system to assess the impact of maintenance practices on the performance of nature-based stormwater solutions



Mrs JARRY Romane

romane.jarry@inrae.fr

Position: PhD Student

Discipline: Agroecology, pastoralism, modelisation

Topic: Simulating the adaptation strategies face to climate change for pastoralism systems and assessing their agroecological performances

Mrs LE GOFF Morgane

morgane.le-goff@inrae.fr

Position: Phd Student

Discipline: Animal science, agronomy

Topic: The adaptation of agro-pastoral livestock systems to climate change (sheep and goat farming systems). My aim is to understand the mechanisms at animal and herd levels, in order to propose climate change adaptation strategies that ensure the multi-performance of these farming systems.



Mrs PICON Gaëlle

gaelle.picon@ens-lyon.fr

Position: Phd Student

Discipline: Environmental geography, internships in spatial ecology

Topic: Analyse the current and future landscape and functional dynamics of agricultural regions used by commensal birds of prey in agriculture, in order to assess the spatial adaptations of these species and the management / governance adaptations of humans in a context of climate change.

M RATTI Pablo

parat@envs.au.dk

Position: Phd Student

Discipline: Environmental Social Science

Topic: The main goals of my project are to design new eco-schemes for DK and assess their social (uptake) and environmental performance.



PROFILE OF TRAINERS



Mr BOMMEL Pierre

pierre.bommel@cirad.fr

(Researcher, CIRAD, UMR SENS, Montpellier, France)

Research topics

As modeller scientist at CIRAD, I contribute to promote the Companion Modelling approach. Through the development of CORMAS, I have been focusing on the development and the use of Agent-Based Modelling for the simulation of renewable resource management issues.

I worked in Brazil for 10 years (University of Brasilia, then PUC-Rio University) and then in Central America for 5 years (University of Costa Rica and CATIE).

I develop models related to environmental management, such as breeding adaptation to drought in the Uruguay or as breeding and deforestation in the Amazon. Nowadays, I am especially interested on collective design of ABM and interactive simulation for assisting role-playing games.

Mr BONTÉ Bruno

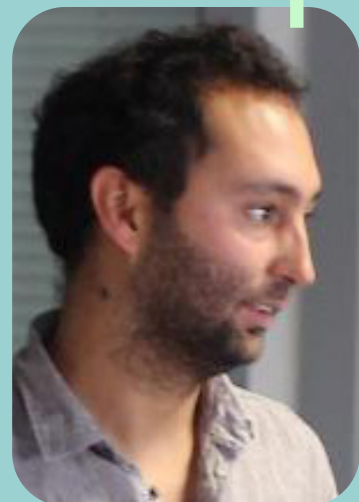
bruno.bonte@inrae.fr

(Researcher, INRAE, UMR G-EAU, Montpellier, France)

Research topics

Bruno Bonté is a Researcher at Inrae in the G-EAU research unit.

His researches are about modelling and simulation of water territories viewed as complex systems. His work is to use, and participate to the development of, integrative tools at the formal level (based on the Discrete Event System Specification (DEVS) formalism), at the conceptual level (based on integrative paradigm such as Multi-Agents Systems paradigm (MAS) or viability theory), and at the level of the use of modelling and simulation for collective decision making (based on the Companion Modelling approach (ComMod)). His recent object of studies were multi-scale social and ecological systems, applied to water resource management and adaptation of territories to global change.



Mr CHAPUIS Kévin

kevinchapis@gmail.com

(Research Fellow, IRD, UMR Espace-Dev, Montpellier, France)

Research topics

After a master graduation in social sciences & philosophy, I have done a PhD in computer science at University Pierre et Maris Curie (Paris 6) in 2016.

My thesis was about job satisfaction and how agent based modeling can help to understand the impact of job organization on the satisfaction of workers. Until then, I have managed to work on the edges of social sciences and artificial intelligence through the prism of multi-agent paradigm.

This led me to work with geographers at IDEES Rouen (France) on the domain of synthetic population — ANR project Gen*.

I am currently working at UMMISCO Team / IRD Vietnam, getting involved in Gama platform development, Gen* integration to Gama, as well as the development of a city wide escape plan simulator in case of catastrophe — ANR project ESCAPE.

Mr LE PAGE Christophe

christophe.le_page@cirad.fr

(Researcher, CIRAD, UMR SENS, Montpellier, France)

Research topics

Active member of the companion modelling network. With a background in fish population dynamics, I have progressively specialized in building agent-based models to simulate the interplay between ecological and social dynamics in ecosystems holding renewable resources used or managed by different categories of stakeholders.

I am participating in the development of the CORMAS platform, with a special interest on spatial aspects and computer-assisted role-playing games.



Mr ZAITSEV Oleksandr

oleksandr.zaitsev@cirad.fr

(Research Unité Mixte de Recherche UMR SENS «Savoirs, ENvironnement, Sociétés»)

Research topics

I am a computer scientist with a background in Artificial Intelligence and data science. I joined CIRAD in December 2022 as a researcher in computer science and modelling to work on the CORMAS platform and strengthen computer science research in the UMR SENS.

In October 2022, I defended my thesis at Inria Lille (RMoD team). The title of my thesis was 'Tools based on data mining to support library updating'. In simple terms, the aim was to help software developers update their dependencies on external libraries to new versions. It was a Cifre thesis funded by the software company Arolla in Paris. Since 2017, I have been a member of the Pharo open-source community. I am the author of several open source software libraries, including DataFrame and pharo-ai. I also regularly contribute to large projects such as CORMAS, PolyMath and Pharo itself. My research interests lie at the intersection of software evolution, software architecture, machine learning and agent-based modelling.



PROVISIONAL PROGRAM

	Monday 02	Tuesday 03	Wednesday 04	Thursday 05	Friday 06	Type of activity
9h	Welcome session	Specification framework	Object concepts & UML: structure (class diagram)	Uses of Agent-Based Models for socio-ecosystems : a panorama	Coding Practice on 1 platform (Gama // Netlogo // Cormas): the "FireMan" model	Collective activity
10h	ReHab Ice-breaking role-playing game	ODD				Courses
11h		Benchmark Model with ODD	Benchmark Model UML class diagrams	BREAK	BREAK	TD ₂ exercises
12h	BREAK	BREAK	BREAK	Coding Practice on 1 platform (Gama // Netlogo // Cormas): the "FireMan" model	Coding Practice on 1 platform (Gama // Netlogo // Cormas): the "FireMan" model	Working Group
13h	Concepts and definitions of Modeling and Simulation	ARDI	UML dynamics		Debriefing FireMan (All)	Case study
14h		Benchmark Model with ARDI	Benchmark Model UML dynamic diagrams		Test of coding skills (All)	
14h30	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	
15h	Introduction to multi-agents systems and agent-based simulation	Get familiar with platform hands on: playing with a model PART 2	Coding Practice on 1 platform (Cormas, Netlogo, GAMA): the "FireMan" model	Participants' Prototype Models (PPMs) Scoping (all)	Participants' Prototype Models (PPMs) Conceptual model (all)	
15h30	BREAK	BREAK		BREAK	BREAK	
16h	Demo of ABM on platforms (Cormas, Netlogo, GAMA)	Get familiar with platform hands on: playing with a model PART 3	BREAK		Participants' Prototype Models (PPMs) Conceptual model (all)	
16h30	Get familiar with platform hands on: playing with a model PART 1 (Gama // Netlogo // Cormas)	Demo of platform specificities	Presentation of reference situations + world café	Coding Practice on 1 platform (Gama // Netlogo // Cormas): the "FireMan" model	PPMs - conceptual model (ODD)	
17h30		General discussion on platforms			Presentation to everybody (5' per group)	

	Monday 09	Tuesday 10	Wednesday 11	Thursday 12	Friday 13
9h	Model Exploration	Model Exploration II	Carte blanche: NetLogoR platform	Carte blanche: CityScope	Preparation of PPMs presentation & demo
10h	BREAK	BREAK	BREAK	BREAK	
13h	Participants' Prototype Models (PPMs) Formal modeling - Implementation of the structure	Participants' Prototype Models (PPMs) Implementation of the dynamics	Participants' Prototype Models (PPMs) Implementation of the scenarios	Participants' Prototype Models (PPMs) simulation exploration	Presentation and demo of PPMs
14h	LUNCH	LUNCH	LUNCH	LUNCH	Final
17h30	Coding support (Gama // Netlogo // Cormas)	Coding support (Gama // Netlogo // Cormas)	Coding support (Gama // Netlogo // Cormas)	Exploration practice on each platform (Gama // Netlogo // Cormas)	
	Participants' Prototype Models (PPMs) Implementing initial state	Participants' Prototype Models (PPMs) Implementation of the dynamics	Participants' Prototype Models (PPMs) implementation of the scenarios	Participants' Prototype Models (PPMs) simulation exploration	
		Summer School Diner			

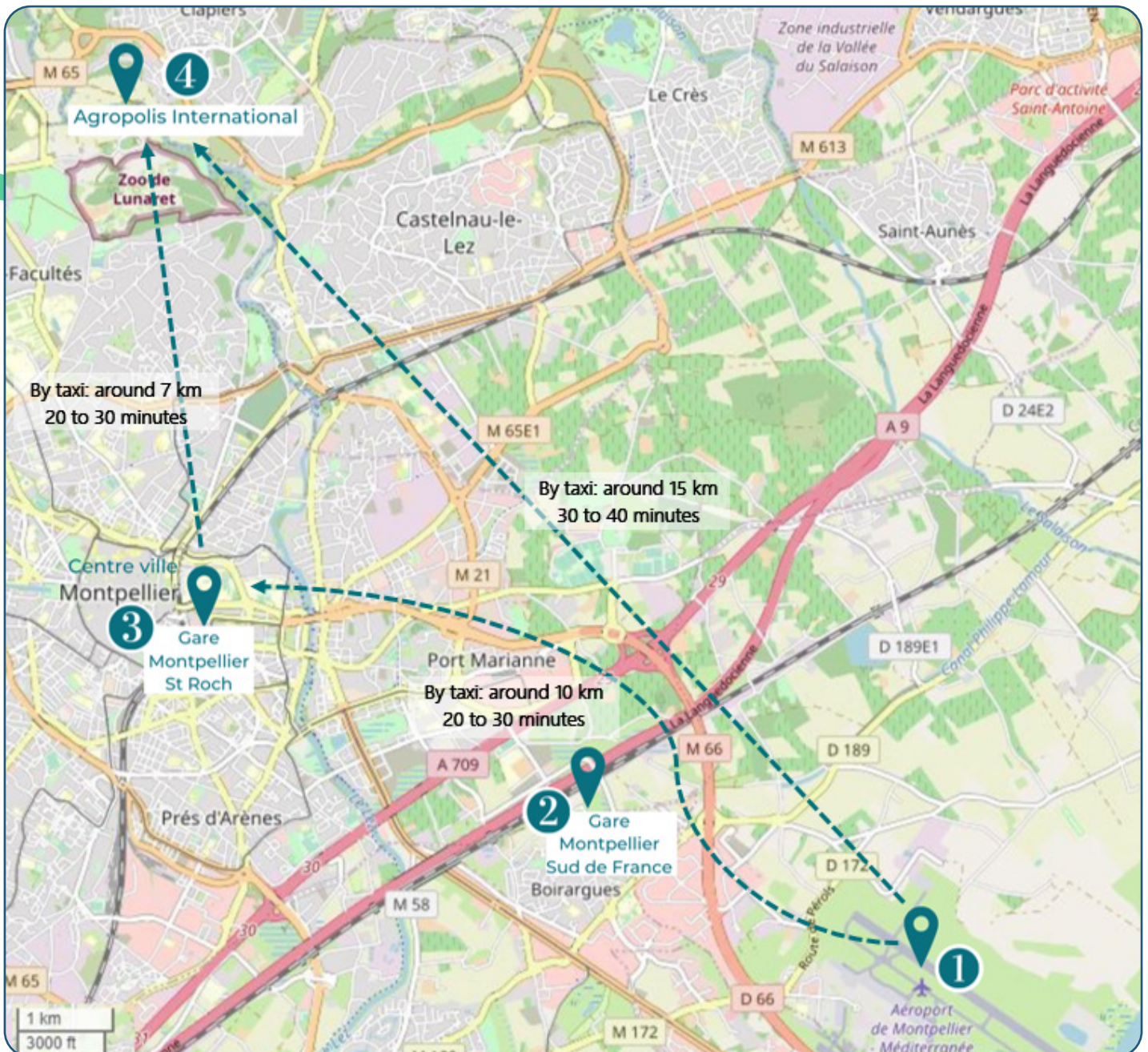
How TO REACH AGROPOLIS INTERNATIONAL ?



1000 avenue Agropolis
34 394 Montpellier cedex 5



(00 33) 04 67 04 75 75



How to REACH AGROPOLIS INTERNATIONAL ?



BY TAXI

FROM MONTPELLIER MÉDITERRANÉE AIRPORT (1)

- Towards the city centre: around 10km – 20 to 30 minutes [+/-40€]
- Towards Agropolis International: around 15km – 30 to 40 minutes [+/-50€]

FROM MONTPELLIER SUD DE FRANCE TRAIN STATION (2)

- Towards the city centre: around 8km – 20 to 30 minutes [+/-30€]
- Towards Agropolis International: around 12km – 30 to 40 minutes [+/-40€]

FROM MONTPELLIER SAINT ROCH TRAIN STATION (3)

Towards Agropolis International: around 7km – 20 to 30 minutes [+/-30€]



BY PUBLIC TRANSPORT

FROM MONTPELLIER MÉDITERRANÉE AIRPORT (1)

Towards the city centre: airport shuttle line 620 up to "Place de l'Europe" (time schedule)
Then Tramway line 1 or 4
[shuttle only: 1.60€ / shuttle+tramway: 2.60€]

FROM MONTPELLIER SUD DE FRANCE TRAIN STATION (2)

- Towards the city centre: shuttle TAM up to "Place de France"
- Then Tramway line 1: single ticket: 1.60€/trip
shuttle+tramway

FROM MONTPELLIER SAINT ROCH TRAIN STATION (3)

Towards Agropolis International:

Tramway line 1, towards "Mosson", stop at "Université des Sciences et Lettres" – around 15 minutes

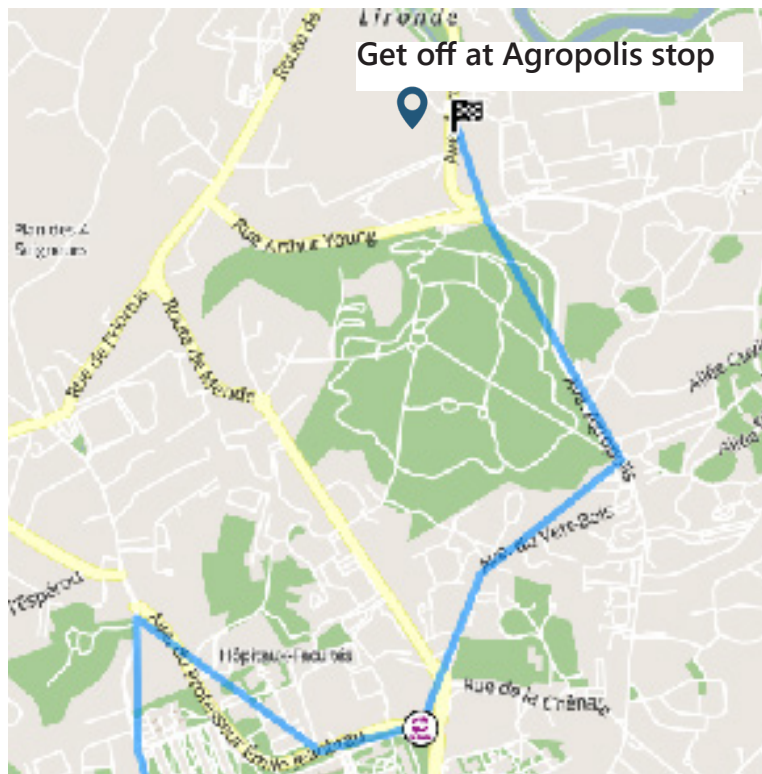
Then bus La Navette A or B, stop at "Agropolis" – around 15 minutes

[single ticket: 1.60€/trip]

Search your itinerary online:

[Transports de l'Agglomération de Montpellier](https://www.agglomeration-montpellier.fr/)

ACCESS TO AGROPOLIS INTERNATIONAL THROUGH PUBLIC TRANSPORT FROM THE CITY CENTRE



Tramway line 1

Stop «Université des sciences et des lettres»
Then take the shuttle **Bus La Navette A or B**

