



Workshop meeting

Theoretical atomic, molecular and optical physics at Paris-Saclay and elsewhere: Past, present, and future: a scientific journey with Christian Jungen and Chris Greene

Organisers: Ecole CentraleSupélec, Laboratoire Aime Cotton, Université Paris Saclay, with a participation of the University of Central Florida

Place: Université Paris-Saclay, Ecole CentraleSupélec and Laboratoire Aimé Cotton, Gif-sur-Yvette (10 miles from Paris)

Date: December 12-13, 2024

Number of confirmed participants: about 40

Registration: If you have not been in touch with the organisers, but want to participate at the meeting, please, register here, preferably, before November 15. The registration is free and needed just for the planning

<https://docs.google.com/spreadsheets/d/1IOvoWmeV8jb9aDPr64Ssd9kGpavHqNNFnH2DVVPIE84/edit?usp=sharing>

Announcement link:

https://docs.google.com/document/d/14v0iih6EzCD8rjf3F64V95qa_AkSiXDYJM0dCzZBrGc/e/dit?usp=sharing

Organising committee: Mehdi Adrien Ayouz, Olivier Dulieu, Viatcheslav Kokoouline, M.K. Pawelkiewicz, Ioan Schneider

Objective: workshop dedicated to contributions of Christian Jungen and Chris H. Greene to the theory of atomic, molecular, and optical physics. In addition, we will use this opportunity of getting together to acknowledge the heritage of the University of Paris-Saclay and many scientists, who worked in Orsay temporarily or permanently, in the area of quantum defect theory.

Preliminary schedule (Michelin Auditorium, the Eiffel building at Ecole CentraleSupélec)

	Date : December 12	
10h00 (AM)	Welcome Remarks	
10h15-12h45	Presentations	X.X.
12h45-13H45	Lunch, buffet	Michelin Auditorium Terrasse
14h00-16h00	Presentations	X.X.
16h00-16h30	Coffee break	Michelin Auditorium Terrasse
16h30-18h30	Presentations	Chairman
19h00	A get-together dinner	Michelin Auditorium Terrasse



Date : December 13		
9h00-11h00	Presentations	X.X.
11h00-11H15	Coffee break	Michelin Auditorium Terrasse
11h15-13h00	Presentations	X.X.
12h45-13H45	Lunch, buffet	Michelin Auditorium Terrasse
14h00-16h00	Presentations	X.X.
16h00-16h30	Coffee break	Michelin Auditorium Terrasse
16h30-17h30	Presentations	X.X.
18h00	End of the meeting, dinner and/or departure	In a local restaurant

The preliminary list of speakers (along with some proposed talk titles) and participants is the following

Name	Affiliation	Talk title
Alijah, Alexander	Université de Reims Champagne-Ardenne, Reims	Photodecomposition of peroxy-nitrous acid in the atmosphere
Ayouz, Mehdi	Université Paris-Saclay, CentraleSupélec, Gif-sur-Yvette	<u>Reception and welcoming remarks</u>
Beyer, Maximilian	Free University Amsterdam	
Cheinet, Patrick	Laboratoire Aimé Cotton, Université Paris-Saclay, Orsay	Auto-ionization zeros in Isolated Core Excitation of double excited Rydberg states of Ytterbium
Curik, Roman	Charles University, Prague	Dissociative recombination: from a toy model to the indirect mechanism
Dulieu, Olivier	Laboratoire Aimé Cotton, Université Paris-Saclay, Orsay	
Eiles, Matt	Max Planck Institute for the Physics of Complex Systems, Dresden	
Forer, Joshua	Columbia Astrophysics Laboratory, Columbia University, New York	A unified treatment of resonant and nonresonant mechanisms in dissociative recombination using R-matrix, frame transformation, and multichannel quantum defect theories
Giannakeas, Panos	Max Planck Institute for the Physics of Complex Systems, Dresden	
Greene, Chris H	Purdue University, West Lafayette and Université le Havre Normandie	Retrospectives on the progress of frame transformation theory
Hvzidos, David	Purdue University, West Lafayette	Recent advances in frame



		transformation theory
Jungen, Christian	Laboratoire Aimé Cotton, Université Paris-Saclay, Orsay	
Kokoouline, Viatcheslav	University of Central Florida, Orlando	Introductory comments
Kreckel, Holger	Max-Planck-Institut für Kernphysik, Heidelberg	
Larson, Asa	Stockholm University	Dissociative recombination of ArH^+ and NeH^+
Luc, Eliane	Laboratoire Aimé Cotton, Université Paris-Saclay, Orsay	
Masnou-Seeuws, Françoise	retired from Laboratoire Aimé Cotton, Université Paris-Saclay, Orsay	
Merkt, Frederic	ETH Zurich	
Mezei, Zsolt	Institute for Nuclear Research (ATOMKI), Debrecen	
Pawelkiewicz, M.K.	Université Paris-Saclay, CentraleSupélec, Gif-sur-Yvette	
Perez-Rios, Jesus	Stony Brook University, Stony Brook	
Pratt, Stephen	Argonne National Laboratory	
Raoult, Maurice	retired from Laboratoire Aimé Cotton, Université Paris-Saclay, Orsay	
Sadeghpour, Hossein	ITAMP, Harvard University, Cambridge	My serendipitous journey (always with Chris in mind) through an ancient molecular field
Santra, Robin	DESY and the University of Hamburg	Collective quantum fluctuations
Savin, Daniel	Columbia Astrophysics Laboratory, Columbia University, New York	
Schneider, Ioan	Université le Havre Normandie	Concluding comments
Guberman, Steve	Institute for Scientific Research, Lexington	
Suzor-Weiner, Annick	University Paris-Saclay, Orsay	Participant
Telmini, Mourad	University of Tunis El Manar	Mapping Rydberg states of H_2 with the Halfium R-matrix method
Ubachs, Wim	Free University Amsterdam	Spectroscopy of H_2 at the limits
Wang, Yimeng	Freie Universität Berlin	
Wolf, Andreas	Max-Planck-Institut für Kernphysik, Heidelberg	

To attend virtually the workshop: we will communicate details later. The most likely, we will use Zoom.

To attend in-person the workshop: The meeting place is Michelin Auditorium, the Eiffel building at Ecole CentraleSupélec, <https://g.co/kgs/4pUE327>. See below the map.



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Some logistics details are given on the next pages.



If you need an advice about hotels nearby, we recommend two options

1. **Hotel d'Orsay**, 2 Rue François Leroux, 91400 Orsay, France; 107.2euro/night with breakfast. It is close to the metro station RER Le Guichet (to go from/to Paris) and the bus station (to go to the meeting place). You can also complete and send the attached reservation form, provided by the hotel, directly to the hotel. The breakfast seems to be included if you book using the attached form.

2. **Campanile Paris Saclay**, 9 Ter Rue Joliot Curie, 91190 Gif-sur-Yvette, France; 124.2 euro/night with breakfast, It is next to the meeting place and about 10 minutes walk from the Laboratoire Aime Cotton. Note that for this hotel, 10% discount is applicable if the booking is done through CentraleSupélec. If you prefer this option with the 10% off, then, please, send us (michal.pawelkiewicz@centralesupelec.fr) a message **before October 25** with the information about which nights you want to stay there. Then, we will do a group reservation on October 25.

How to come to the campus of CentraleSupélec at Gif-sur-Yvette

BY AIR :

From Orly airport (approximately 30 minutes):

- Take ORLYVAL to Antony.
- Then RER B train in the direction "Saint-Rémy-lès-Chevreuse".
- Then consult the public transport directions below.

From Roissy Charles de Gaulle airport (approximately 1 h):

- Take RER B train in the direction "Saint-Rémy-lès-Chevreuse".
- Then consult the public transport directions below.

BY TRAIN OR PUBLIC TRANSPORT :

RER train from Paris to Massy-Palaiseau then a bus (travel time: 25 minutes on a dedicated lane):

- RER B train in the direction "Saint-Rémy-lès-Chevreuse" - until Massy Palaiseau.





- Bus Express 91.10 and Bus Express 91.06 B and C – until the stops “Université Paris Saclay”, “Moulon” or “Joliot-Curie”.

**RER train from Paris to Guichet then a bus
(travel time: 5 minutes):**

- RER B train in the direction “Saint-Rémy-lès-Chevreuse” – until Le guichet.
- Bus Le Guichet N°9 - until the stops “Université Paris Saclay”, “Moulon” or “Joliot-Curie”.

BY CAR :

From Paris Périphérique-Porte de Saint-Cloud:

- Take the national route N118 (green sign) in the direction “Nantes-Bordeaux”.
- After approximately 20 km: Exit number 9 “Centre Universitaire”.
- At the roundabout take the second exit (straight ahead). Afterwards follow the map below.

From Paris by motorways A6-A10:

- Follow the direction “Nantes-Bordeaux”, then the direction “Cité Scientifique” (left lane), then Saclay.
- Follow until the route D36 then turn left to the route D128 in the direction direction “Centre Universitaire”.
- Pass 2 roundabouts. At the third roundabout take the second exit (straight ahead). Afterwards follow the map below.

Coming from the south by the motorway A10:

- Take the national route N118 (green sign) in the direction “Paris-Porte de Saint-Cloud”.
- Exit number 9 “Centre Universitaire”.
- At the roundabout take the second exit (straight ahead). Afterwards follow the map below.

Coming from the south by the motorway A6:

- Take the national route N104 “Francilienne” in the direction “Versailles” until the interchange with the motorway A10.
- Take the national route N118 (green sign) in the direction “Paris-Porte de Saint-Cloud”.
- Exit number 9 “Centre Universitaire”.
- At the roundabout take the second exit (straight ahead). Afterwards follow the map below.



Bus stops of lines 9, 91.06 & 91.10 – Parking access

