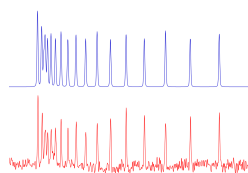


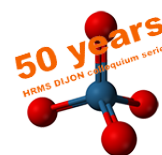
THE TWENTY-SIXTH COLLOQUIUM ON HIGH RESOLUTION MOLECULAR SPECTROSCOPY



DIJON 2019

26 – 30 August, 2019

<http://hrms2019.sciencesconf.org>



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Third Circular: August 2019

The Colloquium will be held at the "Faculté des Sciences Mirande" of the "Université de Bourgogne", 9 avenue A. Savary, DIJON – FRANCE (approximately 20 min by tramway from the train station). The local organization will be undertaken by the "Laboratoire Interdisciplinaire Carnot de Bourgogne" (ICB).

All correspondence should be sent to the secretary of the local organizing committee:

Mme Claire PRIOU-JACOTOT

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Tel. : +33 3 80 39 61 39, Fax : +33 3 80 39 59 71, E-Mail : hrms2019@sciencesconf.org.

Scientific Program:

There will be **10 invited lectures** and **3 mini-symposia**. Parallel sessions will be dedicated to **36 contributed lectures given by PhD students and postdocs**. There will be **7 poster sessions**. A **special lecture** will celebrate the 50th anniversary of this conference series. The covered fields are:

- High resolution rotational, vibrational, and electronic spectroscopy of molecules (radicals, ions, complexes, clusters, ...).
- Molecular dynamics.
- Theory assisting the prediction, simulation, and interpretation of spectra.
- New techniques for high-resolution spectroscopy.
- Applications to atmospheric sciences, astrophysics, planetology, combustion, gas phase biomolecules, metrology and fundamental physics, cold molecules, etc.

Acknowledgments:

We wish to thank the following institutions for their contribution to the success of this conference: Conseil Régional de Bourgogne Franche-Comté, CNRS, Université de Bourgogne, Université Bourgogne Franche-Comté, CRC Press, Taylor & Francis Group, Molecular Physics, Wiley, Qioptiq, ppqSense, Bruker, MenloSystems and Radiant Dyes Laser.

WWW home page:

The conference has a home page on the World Wide Web with URL

<http://hrms2019.sciencesconf.org>

This page provides up-to-date information.

Plenary sessions & Parallel sessions :

The plenary (invited lectures and mini-symposia) sessions will be held in the **Recoura lecture hall**, in the « **Faculté des Sciences Mirande** » building (see attached map on the last page of this document).

Parallel sessions (contributed talks) will be held in the **Recoura, Paris and Bernard lecture halls**, in the « **Faculté des Sciences Mirande** » building.

Poster sessions:

The poster sessions will take place in the Hall of the « **Faculté des Sciences Mirande** » (see attached map on the last page of this document). A white board (**1.5 m wide and 1 m high / "landscape" orientation**) will be available for each participant wishing to present his/her work.

Amat-Mills Prizes & Jon Hougen Travel Award:

Two prizes will award the **best student talk and the best student poster**. Applicants are either working for a PhD or having completed it within the last 12 months (at the time of the meeting). The award will consist of a diploma and the recipient will receive a selection of books. The candidates must assume the sole responsibility for the presentation during the entire session.

Talks of Amat-Mills applicants will be presented during **sessions D (Monday) and E (Tuesday)**.

Posters of Amat-Mills applicants will be displayed during **sessions B (Monday) and F (Tuesday)**.

A special "Jon Hougen" travel award will also be given to two students.

Exhibitors:

The companies listed below will present their products during the colloquium (room near the poster sessions), please **do not forget to visit them!**

- Bruker
- Qioptiq
- ppqSense
- MenloSystems

On Tuesday afternoon, during poster session H, each exhibitor will deliver a short talk presenting their activities and products in the **Recoura lecture hall**.

Sightseeing tour and banquet:

On Wednesday, August 28th, afternoon, there will be a **sightseeing tour** in the **Auxois** (Commardin castle, Châteauneuf-en-Auxois castle and medieval village). In the evening, there will be a **conference dinner in the Château de Marsannay**.

Social program for accompanying persons:

A social program will be organized for accompanying persons. It will consist of various sightseeing tours. More detail will be given on the conference's web site.

PROGRAM OF THE COLLOQUIUM (room/location is indicated in green)

DATES	Aug. 26, 2019	Aug. 27, 2019	Aug. 28, 2019	Aug. 29, 2019	Aug. 30, 2019
Hours	Monday	Tuesday	Wednesday	Thursday	Friday
8:30	8:30 Welcome		8:30		
9:00	Inv. Speakers A Recoura <i>Chair: F. Merkt</i> D. NEUMARK* T. GIESEN	Contrib. Lect. E Recoura/Paris/Bernard** <i>Chairs: M.-A. Martin/J. Buldyreva/P. Dupré</i>	Inv. Speakers I Recoura <i>Chair: S. Willitsch</i> Y.-P. LEE H. FIELDING	Inv. Speakers K Recoura <i>Chair: S. Schlemmer</i> K. LEHMANN B. JEZIORSKI	Poster session P Hall
10:30	Coffee break	Coffee break	10:00 Coffee break	Coffee break	Coffee break
11:00	Poster session B Hall	Poster session F Hall	10:30 Inv. Speakers J Recoura <i>Chair: W. Ernst</i> B. BERNHARDT T. SUZUKI	Contrib. Lect. L Recoura/Paris/Bernard** <i>Chairs: M. Rotger/L. Margulès/L. Manceron</i>	Inv. Speakers Q Recoura <i>Chair: J.-U. Grabow</i> L. NGUYEN K. VODOPYANOV
12:30 – 14:00	Lunch	Lunch	12:00 – Lunch	Lunch	Lunch
14:00	Mini. Symp. C Recoura <i>Cold molecules</i> <i>Chair: P. De Natale</i> B. VAN DE MEERAKER H. WILLIAMS V. DI SARNO P. SCHEIER	Mini. Symp. G Recoura <i>Theoretical predictions</i> <i>Chair: S. Yurchenko</i> M. REY A. YACHMENEV O. POLYANSKY	13:45 Sightseeing tour <i>Discover the Auxois!</i>	Mini. Symp. M Recoura <i>Environmental</i> <i>Chair: J. Vander Auwera</i> B. J. DROUIN A. CUISSET R. MOTIYENKO R. HARGREAVES	
16:00	Coffee break	Coffee break		Coffee break	
16:30	Contrib. Lect. D Recoura/Paris/Bernard** <i>Chairs: A. Perrin//A. Liu/M. Lepère</i>	Poster session H Hall Exhibitors' talks Recoura		Poster session N Hall	
19:00 – 20:00	Town Hall reception	Dinner	19:00 Banquet <i>(with Amat-Mills and Hougén prizes)</i>	Dinner	
Evening		50 years special lecture Recoura <i>Chair: B. Gamache</i> I. KLEINER M. HERMAN P. R. BUNKER	23:00 Bus to Dijon	Poster session O Hall	

* Molecular Physics Lecture.

** Contributed lectures are given each time in three parallel sessions in the Recoura, Paris and Bernard lecture halls.

INVITED SPEAKERS

Tuesday evening "50th anniversary" talk (45')

M. Herman
ULB, Brussels, Belgium

The acetylene saga: A journey into HRMS

This session will also feature two short talks from Isabelle Kleiner (a tribute to Jon Hougen) and Philip R. Bunker (about the first HRMS meeting in 1969).

Plenary speakers (45')

B. Bernhardt
Experimental Physics, Graz University of
Technology, Graz, Germany

Dual comb spectroscopy: a novel tool for high resolution
molecular spectroscopy

H. Fielding
Department of Chemistry, University
College London, UK

UV photoelectron spectroscopy of biochromophores in the
gas-phase and in aqueous solutions

B. Jeziorski
Department of Chemistry, University of
Warsaw, Poland

Theoretical determination of accurate atomic and
molecular properties for an optical pressure standard

T. Giesen
Experimentalphysik V Labor-astrophysik,
Universität Kassel, Kassel, Germany

Laboratory infrared spectroscopy and its application for
astronomical observations

Y.-P. Lee
Applied Chemistry, National Chiao Tung
University, Hsinchu, Taiwan & Institute of
Atomic and Molecular Sciences,
Academia Sinica, Taipei, Taiwan

Infrared spectra of free radicals and protonated species
isolated in solid para-hydrogen

K. Lehmann
University of Virginia's Department of
Chemistry, Charlottesville, USA

Mid-IR Near-IR double resonance spectroscopy of CH₄ and
CH₃D

D. Neumark (Mol. Phys. Lecture)
College of Chemistry, University of
California, Berkeley, USA

High resolution photoelectron spectroscopy of negative ions

L. Nguyen
USA, Université Paris 12 / CNRS, Créteil,
France

Understanding (coupled) large amplitude motions - The
interplay of microwave spectroscopy, spectral modeling,
and quantum chemistry

T. Suzuki
Department of Chemistry, Graduate School
of Science, Kyoto University, Japan

Ultrafast VUV photoelectron spectroscopy of dynamics in
the gas and condensed phases

K. Vodopyanov
College of Optics and Photonics, University
of Central Florida, Orlando, USA

Massively parallel sensing of trace molecules and
isotopologues with subharmonic mid-IR frequency combs

Mini-symposia

• MS1: Theoretical predictions of molecular spectra

M. Rey (40')
GSMA, CNRS / Université de Reims
Champagne-Ardenne, Reims, France

Toward completeness and high accuracy from advanced
computational methods: a review

O. Polyansky (40')
Dept. of Physics and Astronomy, University
College London, UK

Extra high accuracy line positions and intensities of three
and four atomic molecules from variational calculations

A. Yachmenev (20')
Center for Free-Electron Laser Science
(CFEL), Deutsches Elektronen-Synchrotron
DESY, Hamburg, Germany

Creating, imaging and controlling chiral molecules with
electric fields

• **MS2: Environmental far- & mid-IR spectroscopy**

B. Drouin (30')

JPL, Pasadena, USA

The PREFIRE (Polar Radiant Energy in the Far-InfraRed Experiment) project

A. Cuisset (30')

LPCA, Université du Littoral, Dunkerque, France

High-resolution rovibrational spectroscopy of molecules with environmental interest using electronic, optoelectronic and synchrotron terahertz sources

R. Motiyenko (30')

PhLAM, Université de Lille / CNRS, Lille, France

Spectroscopy of atmospherically relevant molecules: the contribution from the terahertz domain

R. Hargreaves (30')

Harvard-Smithsonian Center for Astrophysics, Harvard, USA

Spectroscopy of gases at high temperature with application to HITEMP

• **MS3: Cold molecules for spectroscopy and dynamics**

P. Scheier (40')

University of Innsbruck, Innsbruck, Austria

Spectroscopy of cold molecular ions from doped helium nanodroplets

B. Van de Meerakker (40')

Radboud University, Nijmegen, The Netherlands

High resolution scattering experiments using velocity controlled molecular beams

H. Williams (20')

Imperial College, London, UK

Laser cooled molecules for tests of fundamental physics

V. Di Sarno (20')

CNR-Istituto Nazionale di Ottica, Naples, Italy

Lamb-dip spectroscopy of buffer-gas-cooled stable molecules

PRACTICAL INFORMATION

PLEASE REFER TO THE ATTACHED MAPS (LAST PAGE)

• HOW TO REACH DIJON...

A visa may be required; please ask your travel agency.

Plane: Nearest airports are PARIS (Orly and Roissy-Charles-de-Gaulle), LYON (Saint-Exupéry), GENEVA (Cointrin) and BASEL-MULHOUSE.

Train: From/to Dijon, numerous non-stop and daily connections with PARIS (Gare de Lyon), LYON (to MARSEILLE / NICE / ITALY / NIMES / MONTPELLIER / SPAIN / TOULOUSE / GRENOBLE), NANCY – METZ (to LUXEMBOURG / GERMANY), REIMS (to LILLE / BELGIUM), BESANCON (to STRASBOURG / GERMANY), LAUSANNE, NEUCHÂTEL, BERNE (Switzerland).

WARNING! 1) Reservation is required (with possible additional fees) for TGV trains (tickets may be purchased at automatic machines, or online, see address below, or at the station desk). **2)** Before getting to the station platform, don't forget to validate your ticket (and reservation if any) at one of the "yellow machines" (except for e-Tickets).

From Dijon-Ville Station, you can reach the University Campus either by **tramway line T1** (in front of the station, recommended), and leave at "**Université**" or by taxi cabs (from the main station),

All information concerning trains in France (time-tables, ...) can be found on the SNCF (French Railway Company) Web server :

<http://www.sncf.fr>

Car:

- From Paris (A6/A38): do not cross Dijon center. Follow direction "TROYES" by continuing on the "LINO" highway that goes around Dijon and exit at "DIJON-UNIVERSITE".
- From Nancy (A31): exit "ARC SUR TILLE" (around 15 km away from Dijon) and follow the "ARC" road to "DIJON" for arriving on expressway "G. Pompidou" and exit at "DIJON-UNIVERSITE".
- From Lyon (A6): exit "DIJON-CENTRE"; then take Express Way "G. Pompidou" and "DIJON-CENTRE" then leave at exit "DIJON-UNIVERSITE".
- *Parking spaces are limited on the Campus. See attached maps (last page).*

• WHEN ARRIVING...

We recommend you to go directly to the Colloquium Office, central hall of the "**Faculté des Sciences Mirande**", **9 Avenue Alain Savary** (mark "Registration desk" on the campus map), which will stay open from 16:00 till 23:00 on Sunday, August 25 (but please, try to arrive before 22:00!). You will be able to collect the Colloquium material, your tickets for the Restaurant (if any), and all required information to reach - either the University Dorms "Mansart" – or your hotel.

If you plan to arrive when the Colloquium Office is closed, you may go directly to the University dorms (ask for the caretaker) or to your hotel.

A Sunday evening snack meal will be available for people who bought one when they registered. This will take place at building's Cafeteria, from 19:00 to 23:00.

• THE COLLOQUIUM...

Location: in the " Sciences Mirande" (mark "Registration desk" on the map). Room details are given above.

Office-registration desk: in central hall ("Salle du Conseil"); opening hours:

- Sunday: 16:00 till 23:00.
- Monday: 08:00 to 12:00 and 14:00 to 18:00.

- Tuesday, Thursday and Friday: 09:00 to 11:00 and 15:00 to 17:00 (closed on Wednesday).

University restaurant: "Mansart" (marked "Restaurant" on the campus map), for breakfast and meals. Opening hours are as follows:

- **Breakfast:** from 07:30 till 08:15.
- **Lunch** : from 12:30 till 13:15 (closed at 14:00). At 12:00 on Wednesday (before sightseeing tour).
- **Dinner** : from 18:30 till 19:30.

University dorms: "Mansart", "Boulevard Mansart" (marked "Dorms" on the campus map). It consists in single furnished rooms (bed sheets, towels, soap) with a bathroom (WC, basin and shower)

Reception: "Apéritif" offered by the City of Dijon, on Monday August 26 (around 19:00), at the Town Hall ("Palais des Ducs de Bourgogne" in "Salle de Flore").

Wednesday session, sightseeing tour and banquet: on Wednesday August 28.

Departure from Dijon at 13:45 by special buses

VERY IMPORTANT!

- 1) The tour and banquet cost is included in the registration fees.
- 2) Payment by Credit Card or Check only will be available, **in a limited way**, at the Colloquium Office for late registration and accommodation fees only. **NO CASH PAYMENT WILL BE ACCEPTED.**
- 3) WIFI accounts will be provided to each participant. However, we **STRONGLY RECOMMEND TO USE THE "EDUROAM"** network. This international academic WIFI access is very convenient and exists in most universities around the world. You can ask for access certificates at your local computing resource center.

• MISCELLANEOUS ...

Tramway:

The Campus is connected to Downtown and the Railway Station by **tramway line T1**.

Weekdays service: 06:00 to midnight, with a 7 to 8 minutes frequency.

Sunday: 07:00 to midnight, with a 15 to 20 minutes frequency.

Tickets (reusable support, do not throw it away!) may be purchased from machines at each station. It is also possible to pay inside the tram using a contactless Credit Card.

Post office – Bank / Change:

Several bank offices are available around the campus.

Cash machines (CB/VISA/MASTERCARD).

Mansart Post Office ("**Post Office**" mark on the campus map): 08:00 to 19:00 (Saturday: 08:00-12:00).

For your information, the present official exchange rate (French banks, mid-July, 2019) is:

$$1 \text{ €} \approx 1.12 \text{ US\$} \approx 121.2 \text{ ¥}$$

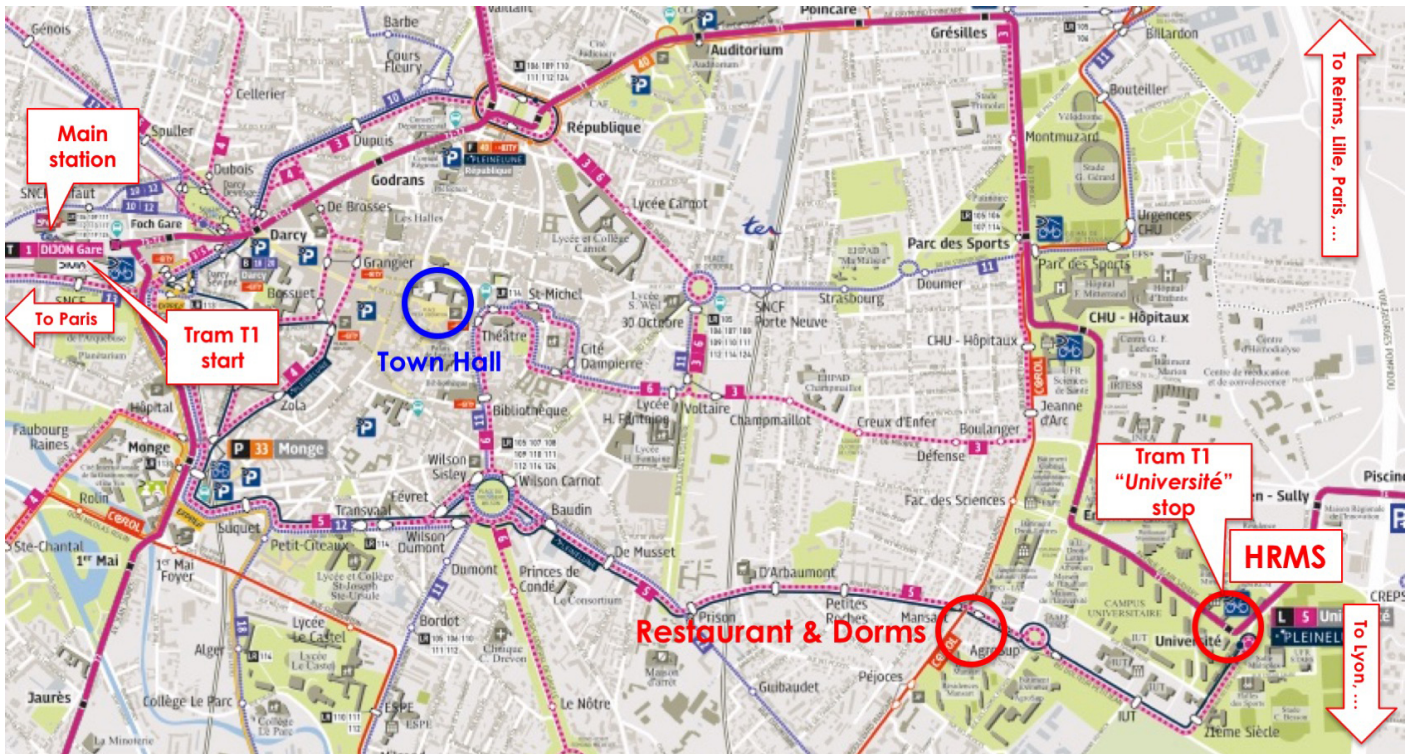
Others: The Colloquium Office will keep at your disposal:

- computers and WiFi access (see above) to the Internet,
- detailed maps of Dijon and the bus network,
- tourist information (maps, guides) about Dijon and Burgundy,
- addresses of restaurants, wine-cellars, wine growers,
- information on City movies, theaters, concerts ...

... wishing to make your stay in Dijon as pleasant as possible!

MAPS

1) Dijon and Campus Situation



2) Campus Maps

