



DIJON 2011

29 August – 2 September, 2011

<http://hrms2011.sciencesconf.org>



Executive Committee

MICHEL HERMAN
Chimie quantique et
Photophysique,
Université libre de Bruxelles,
Belgium

MARTIN QUACK
Lab. für Physikalische
Chemie,
ETH Zürich,
Switzerland

PAOLO DE NATALE
Istituto Nazionale di Ottica-
CNR
Firenze,
Italy

Local Organizer
VINCENT BOUDON
Laboratoire Interdisciplinaire
Carnot de Bourgogne
UMR 5209 CNRS Université
de Bourgogne, France

Scientific Committee

D. BERMEJO PLAZA
V. BOUDON
P. DE NATALE
M. HERMAN

T. HUET
M. KREGLEWSKI
F. MERKT
J. ORPHAL

V. PEREVALOV
A. PERRIN
M. QUACK
T. SOFTLEY

J. TENNYSON
W. THIEL
W. UBACHS

Local Organizing Committee

H. BERGER
V. BOUDON
B. BUSSERY-HONVAULT
J.-P. CHAMPION
F. CHAUSSARD
O. FAUCHER
T. GABARD

E. HERTZ
P. HONVAULT
S. KLEIN
A. JAVELLE
C. JONON
B. LAVOREL
C. LEROY

M. LOETE
S. MERTES
F. MICHELOT
J.-M. MULLER
Y. PASHAYAN-LEROY
S. PERNOT
C. PRIOU

R. SAINT-LOUP
Y. SCRIBANO
D. SUGNY
B. SINARDET
C. WENGER
N. ZVEREVA-LOETE

Third Circular: July 2011

The Colloquium will be held at the "Faculté des Sciences Gabriel" of the "Université de Bourgogne", 6 bd. Gabriel, DIJON – FRANCE (approximately 20 min by bus 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 Sandra KLEIN

Laboratoire Interdisciplinaire Carnot de Bourgogne, UMR 5209 CNRS-Université de Bourgogne

9 av. A. Savary, BP 47 870, F-21078 DIJON Cedex – France.

Tel. : +33 3 80 39 60 23, Fax : +33 3 80 39 59 71, E-Mail : hrms2011@sciencesconf.org.

Scientific Program:

There will be 10 invited lectures and 3 mini-symposia. Contributions, presented as posters, will cover the fields of:

- 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: Ville de Dijon, Conseil Régional de Bourgogne, CNRS, Université de Bourgogne, Laboratoire Interdisciplinaire Carnot de Bourgogne, Bruker, Quantel, European Space Agency, CRC Press, NRC Research Press, Wiley.

Further information on WWW home page:

The conference has a home page on the World Wide Web with URL to provide up-to-date information:

<http://hrms2011.sciencesconf.org>

LIST OF INVITED SPEAKERS

Session numbers refer to the Colloquium program on the next page.

A1. Pierre-François COHEUR

ULB, Brussels, Belgium

A2. Tucker CARRINGTON

Queen's University, Kingston, Ontario, Canada

C1. Guy WEBER

ICB, Dijon, France

C2. Athena COUSTENIS

LESIA, Meudon, France

G1. Marsha LESTER

University of Pennsylvania, Philadelphia PA, USA

MOLECULAR PHYSICS LECTURE

G2. Nathalie PICQUE

ISMO, Orsay, France

M1. Hans Jakob WOERNER

ETH Zürich, Switzerland

M2. David PARKER

Radboud University of Nijmegen, Netherlands

P1. Wolfgang ERNST

Technische Universität Graz, Austria

P2. Stephan SCHLEMMER

Universität zu Köln, Germany

Atmospheric composition measurements with the IASI hyperspectral sounder: local to global.

A new contracted-basis iterative method for computing high J ro-vibrational levels of polyatomic molecules: new results for methane.

Infrared spectroscopic investigations of molecules physically adsorbed on MFI zeolites.

The neutral atmospheric chemistry on Titan.

A new spectroscopic window on hydroxyl radicals and their association reactions of significance in the atmosphere.

Molecular spectroscopy with laser frequency combs.

Time-resolved high-harmonic spectroscopy of chemical reactions.

High resolution translational spectroscopy using velocity-map imaging.

Spectroscopy of doped helium droplets: Weakly bound clusters, Rydberg states, and electron spin resonance.

Light induced reactions of cold molecular ions.

Mini-symposia

• Spectroscopy of exotic Rydberg systems

E1. Chris GREENE

JILA, Boulder CO, USA

E2. Adam KIRRANDER

Laboratoire Aimé Cotton, Orsay, France

E3. Edward EYLER

University of Connecticut, Storrs CT, USA

Unusual Rydberg systems at long- or short-range.

Theoretical dynamics of heavy Rydberg states.

Investigating Rydberg-Rydberg and ion-pair interactions by excitation of an ultracold gas of Rb atoms.

• "Hot Topics"-1

I1. Oleg BOYARKIN

EPFL, Lausanne, Switzerland

I2. Igor PTASHNIK

University of Reading, UK

Spectroscopy of water in single quantum states: a benchmark for calculations.

Water vapor infrared continuum: CAVIAR FTS laboratory experiments and implication for possible causes.

• "Hot Topics"-2

J1. Pasquale MADDALONI

INOA, Napoli, Italy

J2. Krzysztof PACHUCKI

University of Warsaw, Poland

Unveiling the physics of molecules with comb-assisted infrared coherent sources.

Quantum electrodynamics of molecular hydrogen.

• Advanced sources for high resolution spectroscopy

K1. Laurent MARGULES

PhLAM, Lille, France

K2. Federico CAPASSO

Harvard School of Engineering and Applied Sciences, Cambridge MA, USA

K3. Pascale ROY

Synchrotron SOLEIL, France

State-of-the-art experiments for high resolution terahertz spectroscopy.

State-of-the-art quantum cascade lasers for spectroscopy and chemical sensing.

Intense and stable far infrared synchrotron radiation for high resolution FTIR spectroscopy.

PROGRAM OF THE COLLOQUIUM

See detailed program of sessions online: <http://vesta.u-bourgogne.fr/hrms/>

DATES	Aug. 29, 2011	Aug. 30, 2011	Aug. 31, 2011	Sept. 1, 2011	Sept. 2, 2011
Hours	Monday	Tuesday	Wednesday	Thursday	Friday
8:30	8:30 Welcome		8:00 Bus to Besançon		
9:00	Inv. speakers A <i>Chair: M. Herman P.-F. Coheur T. Carrington</i>	Inv. speakers E <i>Mini-symposium on Rydberg systems Chair: F. Merkt C. Greene A. Kirrander E. Eyler</i>	9:30 Inv. sp. I <i>Mini-symposium on hot topics Chair: W. Ubachs O. Boyarkin I. Ptashnik</i>	Inv. speakers K <i>Mini-symposium on advanced sources Chair: T. Huet L. Margulès F. Capasso P. Roy</i>	Inv. speakers P <i>Chair: A. Ross W. Ernst S. Schlemmer</i>
10:30	Coffee break +	Coffee break +	10:45 Coffee break	Coffee break	Coffee break
	Poster session B	Poster session F	11:15 Inv. sp. J <i>Mini-symposium on hot topics Chair: W. Ubachs P. Maddaloni K. Pachucki</i>	Poster session L	Poster session Q
12:30 – 14:00	Lunch	Lunch	Lunch	Lunch	Lunch
14:00	Inv. speakers C <i>Chair: J. Tennyson G. Weber A. Coustenis</i>	Inv. speakers G <i>Chair: M. Quack M. Lester * N. Picqué</i>	14:00 Sightseeing tour	Inv. speaker M <i>Chair: B. Lavorel H. J. Woerner D. Parker</i>	
15:30	Coffee break +	Coffee break +	17:45 Departure	Coffee break +	
	Poster session D	Poster session H		Poster session N	
19:00 – 20:00	Town Hall reception	Dinner	19:00 Banquet	Dinner	
Evening		<i>Downtown conference A. Coustenis +</i> <i>Bar des Sciences</i>	23:00 Bus to Dijon	Poster session O	

* Molecular Physics Lecture

Note: The Downtown Conference (on the exploration of Saturn's system) and the "Bar des Sciences" (about the detection of molecules in space and atmospheres) are additional events that will take place downtown for the Dijon people.

Note : There will be free access to the restaurant from **12:30 to 13:15 (restaurant closed at 14:00) for lunch** and **from 18:30 to 19:30 for dinner (Tuesday and Thursday)**.

PLENARY SESSIONS

The plenary (invited lectures) sessions will be held in the **Gutenberg Lecture Hall**, just behind the main building of the "Faculté des Sciences Gabriel".

POSTER SESSIONS

The poster sessions will be held in the hall of the "Faculté des Sciences Gabriel". A board of **1.5 m wide and 1 m high** will be at disposal of each participant wishing to present his/her work.

AMAT-MILLS AWARD

The 2011 Amat-Mills Award will be awarded to **a young spectroscopist 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 be given a selection of books.

The candidates must present *a regular poster* at the "22nd Colloquium on High Resolution Molecular Spectroscopy" on their PhD work *and assume the sole responsibility for the presentation during the entire session*.

Posters of Amat-Mills applicants will be displayed during **session B, D and F**.

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
- Quantel

SIGHTSEEING TOUR AND BANQUET (WEDNESDAY AUGUST 31)

As usual, the HRMS Colloquium features a touristic tour and a conference banquet. This year, the whole conference will **move to Besançon the entire Wednesday!**

We will start at 8 am by bus from Dijon and will have two oral sessions constituting the "Hot Topics" mini-symposium at the Université de Franche-Comté.

In the afternoon, we will visit the "**Citadelle de Besançon**". This famous fortified place was built by Vauban four centuries ago on the top of a hill placed in a loop of river Doubs. It harbors several museums, a zoo and offers an impressive view on the surroundings from its long ramparts. This spectacular site is part of the UNESCO's World Heritage.

In the evening, we will have a banquet in the "**Château de Clairvans**", a very nice castle near Dole.

SOCIAL PROGRAM FOR ACCOMPANYING PERSONS

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

PRACTICAL INFORMATION

PLEASE REFER TO THE ATTACHED MAPS

• 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, NEUCHATEL, BERNE (Switzerland).

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

From Dijon-Ville Station, you can reach the University Campus either by taxi cabs (just on the central mall), or by City Bus, line number 5.

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

<http://www.sncf.fr/indexe.htm>

Car:

- From Paris (A6 / A38): follow direction "GENEVE-GRAY" by North and East Boulevards, till "Boulevard Gabriel".
- From Nancy (A31): exit "TIL-CHATEL" (around 15 km away from Dijon) and follow the road direction "DIJON" for arriving on expressway "G. Pompidou".
- From Lyon (A6): exit "DIJON-CENTRE"; then Express Way "G. Pompidou" and "DIJON-CENTRE" or "QUETIGNY-CAMPUS UNIVERSITAIRE".
- Others: follow "Genève" or "Gray".
- "UNIVERSITE" or "FACULTES" panels are in the Campus vicinity (but rare!).
- On Campus: follow arrows "HRMS 2011".
- Parking is free all over the Campus.

• WHEN ARRIVING ...

We recommend you to go directly to the Colloquium Office, central hall of the "Faculté des Sciences", 6 boulevard Gabriel (mark "Registration desk" on the campus map), which will be kept open from 16:00 till midnight on Sunday, August 28 (but please, try to arrive before 22:00!). You will get there all 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 cold meal will be available for people who bought one when registering. This will take place at the 4th floor of the registration building (*Cafeteria*), from 19:00 to 23:00.

• THE COLLOQUIUM ...

Location: in the "Gabriel" building of the Science Faculty: (mark "Registration desk" on the map).

- Plenary sessions (invited speakers): Gutenberg lecture hall (outside the building).
- Poster sessions: main hall of the building.
- Scientific/commercial exhibitions: room in main hall (during poster sessions).

Office-registration desk: in central hall (Room R3); opening hours:

- Sunday: 16:00 till midnight.
- 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 to 08:15, **except on Wednesday, from 7:00 to 07:45.**
- **Lunch** : from 12:30 to 13:15 (closed at 14:00).
- **Dinner** : from 18:30 to 19:30.

University dorms: "Mansart", "Boulevard Mansart" (mark "Dormitories" on the campus map).

- Luxury rooms: Single furnished rooms (bed sheets, towels, soap) with a bathroom (WC, basin and shower)
- Standard rooms: Single furnished rooms with lavatory (bed sheets, towels, soap). Shower-room, W.C. and working-room on each floor.
- Phone-box on first floor.

Reception: "Apéritif" offered by the City of Dijon, on Monday August 29 (around 19:00), at the Town Hall ("Palais des Ducs de Bourgogne"). Special buses will be at your disposal to join the Town Hall (but everybody should return to the campus by his own means).

Wednesday session, sightseeing tour and banquet: on Wednesday August 31.

Departure from Dijon precisely at 8:00 by special buses.

IMPORTANT! 1) The tour and banquet cost is included in the registration fees. Thus, accompanying persons wishing to participate will have to pay the amount of 90 € (if it was not done when registering) ; please register and pay at the Office no later than Monday August 29 noon.

2) Payment by cheque or by cash (*in Euros*) will be available at the Colloquium Office for late registration and accomodation fees only.

• MISCELLANEOUS ...

City bus:

The Campus is connected to Downtown and the Railway Station by regular lines number 1 and 5.

Weekdays service: 06:00 to midnight, with a 7 to 15 minutes frequency.

Sunday: 09:00 to midnight, with a 30 to 40 minutes frequency.

Single tickets may be purchased from the driver.

Only requested stop! When you want to get out at the next stop, just push the red button "Arrêt demandé".

Post office – Bank / Change:

Several bank offices are available around the campus.

Automatic banknotes delivery (CB/VISA/MASTERCARD).

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

For information, the present official exchange rate (French banks, 06.07.2011) is:

$$1 \text{ €} \approx 1.43 \text{ US\$} \approx 115.9 \text{ ¥}$$

Social events for accompanying persons:

A touristic program will be organized for accompanying persons. For detailed information and pricing, please refer to the colloquium's web site.

Others: The Colloquium Office will keep at your disposal:

- computers and WiFi access 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, theatres, concerts ...

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

