

**NOBEL SYMPOSIUM 172**

# **ATTOSECOND SCIENCE AND TECHNOLOGY**

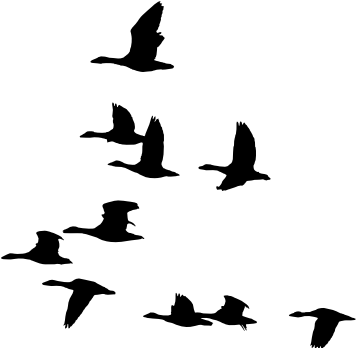
**PROGRAM**

**20-24  
AUGUST  
2023**

**Hotel Skansen  
Kyrkogatan 2, 269 33 Båstad**

**[www.atomic.physics.lu.se/ns172](http://www.atomic.physics.lu.se/ns172)**





# AGENDA

## SUNDAY

**AFTERNOON**

**Arrival of participants**

**19:00 –**

**Dinner**

**Talk: The Nobel Prize and Nobel Symposia**

## MONDAY

**09:00 – 12:35**

**Attosecond Sources**

**14:00 – 17:00**

**Attosecond Science in Condensed  
Materials**

**19:00 –**

**Dinner**

**Poster Session**

## TUESDAY

**09:00 – 12:35**

**Attosecond Physics and Spectroscopy**

**14:00 – 17:00**

**Attosecond Quantum Science**

**19:00 –**

**Dinner**

**Talk: How attoseconds became a science**

## WEDNESDAY

**09:00 – 12:35**

**Attosecond Chemistry**

**14:00 – 17:00**

**Attosecond Applications and Outlook**

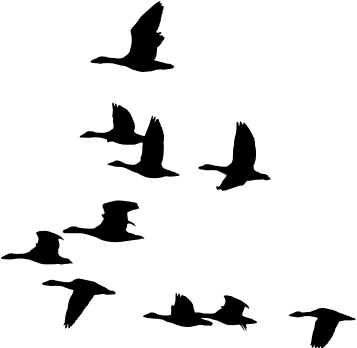
**19:00 –**

**Dinner**

**Talk: Filming quantum evolution with  
attosecond resolution**







# SUNDAY

**15:00 –**

**Check-in and registration**

**19:00 –**

**Dinner**

STARTER

**Fennel, radish, trout roe, artichoke, butter-fried toast**

MAIN

**Chicken from Bjäre, grilled lettuce, nobis sauce, Tegel  
Åtton-cheese, fresh carrot boiled with vinegar,  
sunflower seeds, chanterelles**

**Talk**

Eva Lindroth, Stockholm University

**"The Nobel Prize and Nobel Symposia"**

**CHAIR: JOHAN  
MAURITSSON**





# MONDAY

09:00 –  
12:35

## ATTOSECOND SOURCES

CHAIR: PER ENG-  
JOHANSSON


- 09:00** Louis F. DiMauro, Ohio State University  
**"Attosecond sources"**
- 09:45** Anne L'Huillier, Lund University  
**"High-order harmonic generation: past, present and future"**
- 10:20** **Coffee Break**
- 10:50** Katsumi Midorikawa, RIKEN Center for Advanced Photonics  
**"Generation of intense attosecond pulses and their application to XUV multiphoton processes"**
- 11:25** Agostino Marinelli, SLAC National Accelerator Laboratory  
**"Attosecond X-ray free-electron lasers"**
- 12:00** Zenghu Chang, University of Central Florida  
**"Attosecond X-ray sources driven by short-wave and mid-wave infrared lasers"**

## LUNCH BREAK

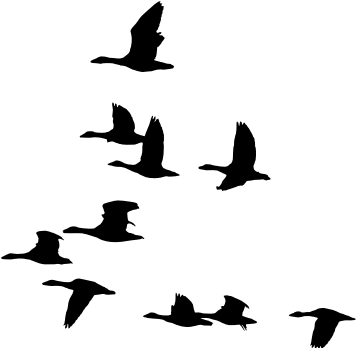
14:00 –  
17:00

## ATTOSECOND SCIENCE IN CONDENSED MATERIALS

CHAIR: EVA  
LINDROTH

- 14:00** Margaret Murnane, Boulder University of Colorado  
**"Attosecond science in condensed materials"**
- 14:45** Peter Oppeneer, Uppsala University  
**"Ab initio calculations for ultrafast magnetic processes in solids"**
- 15:20** **Coffee Break**
- 15:50** Peter Hommelhoff, University of Erlangen-Nuremberg  
**"From precision attosecond physics to lightwave electronics"**
- 16:25** Joachim Burgdörfer, Vienna University of Technology  
**"Attosecond chronoscopy in solids and at solid surfaces"**
- 





# MONDAY

19:00 –

## Dinner

### STARTER

**Vegetables from Bjäre, deep fried Nova-cheese, cream cheese foam with truffles, cured lemon, black radish**

### MAIN

**Grilled sirloin, whipped browned butter, potato-croquettes, grilled zucchini, silver onion, salad from Vejbystrand, red wine jus**

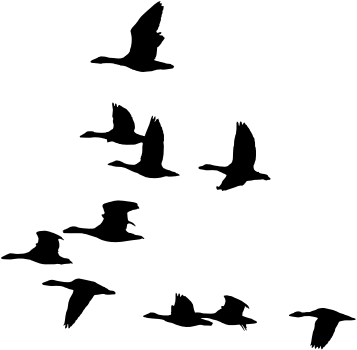


## Poster Session

Young researchers

**"Attosecond Science in Sweden"**





# TUESDAY

09:00 –  
12:35

## ATTOSECOND PHYSICS AND SPECTROSCOPY

- 09:00** Pascal Salières, CEA-Saclay  
**"Attosecond photoionization dynamics in the gas phase"**
- 09:45** Paul Corkum, University of Ottawa  
**"Recollision – Attosecond and angstrom physics"**
- 10:20** **Coffee Break**
- 10:50** Nirit Dudovich, Weizmann Institute of Science  
**"Attosecond interferometry"**
- 11:25** Stephen R. Leone, University of California Berkeley  
**"Attosecond spectroscopy of coherent dynamics"**
- 12:00** Mette B. Gaarde, Louisiana State University  
**"High harmonic spectroscopy of attosecond dynamics in molecules and monolayer materials"**

**CHAIR: ANNE-LISE  
VIOTTI**

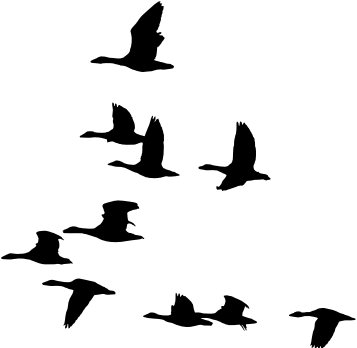
## LUNCH BREAK

14:00 –  
17:00

## ATTOSECOND QUANTUM SCIENCE

- 14:00** Maciej Lewenstein, ICFO Institute of Photonic Sciences  
**"How quantum is Atto?"**
- 14:45** Marc Vrakking, Max Born Institute  
**"Attosecond entanglement and coherence"**
- 15:20** **Coffee Break**
- 15:50** Olga Smirnova, Max Born Institute  
**"Ultrafast chirality: from topological connection to charge-directed reactivity"**
- 16:25** Dimitris Charalambidis, FORTH Institute of Electronic structure and Laser  
**"Nonlinear EUV processes and strong EUV field effects"**

**CHAIR: MARCUS  
DAHLSTRÖM**



# TUESDAY

19:00 –

## Dinner

### STARTER

**Carpaccio of tenderloin, dressing with parmesan, pickled shallots, capers, tomatoes from Viken, black pepper**

### MAIN

**Cod loin, vongole, red pepper, lemon, parsley, grilled cucumber, mashed potatoes with chives & lemon**

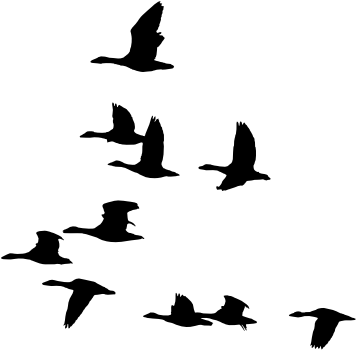
## Talk

**CHAIR: JOHAN  
MAURITSSON**

Kenneth J. Schafer, Louisiana State University  
**"How attoseconds became a science"**







# WEDNESDAY

09:00 –  
12:35

## ATTOSECOND CHEMISTRY

CHAIR: MATHIEU  
GISSELBRECHT

- 09:00** Fernando Martín, Universidad Autónoma de Madrid  
**"Attosecond chemistry"**
- 09:45** Mauro Nisoli, Politecnico di Milano  
**"Attosecond spectroscopy for the investigation of coupled electron–nuclear dynamics in molecules"**
- 10:20** **Coffee Break**
- 10:50** Franck Lépine, Claude Bernard University  
**"Complex molecules studied with ultrashort XUV pulses: towards attosecond experiments in proteins and DNA"**
- 11:25** Jon Marangos, Imperial College London  
**"The prospects for measurement of ultrafast electronic dynamics and electron–nuclear coupling by linear and non-linear X-ray probing"**
- 12:00** Françoise Remacle, University of Liège  
**"Steering selective quantum dynamics through electronic entanglement in molecules pumped by ultrashort optical pulses"**

LUNCH BREAK





# WEDNESDAY

14:00 –  
17:00

## ATTOSECOND APPLICATIONS AND OUTLOOK

14:00

Ursula Keller, ETH Zurich

**"Attosecond applications and outlook"**

**CHAIR: CORD L.  
ARNOLD**

14:45

Henry Kapteyn, Boulder University of Colorado

**"Putting high harmonics to work: imaging and metrology at the diffraction limit"**

15:20

**Coffee Break**

15:50

Giuseppe Sansone, Freiburg University

**"New perspectives for attosecond science at free-electron lasers"**

16:25

Ferenc Krausz, Max Planck Institute of Quantum Optics

**"Tracking electrons and light waves: from gaining insight to addressing real-world challenges"**

19:00 –

**Dinner**

STARTER

**Tarte Flambée, grilled leek, ham from Heberleins, cream cheese, parmesan cheese, boiled beets, pistachio, chervil**

MAIN

**Baked artic char, potato confit with Västerbotten cheese, white onion, fried chanterelles, kale, beurre blanc, chives**

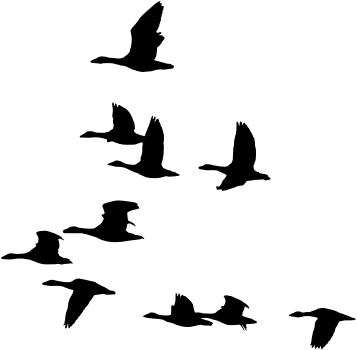
**Talk**

**CHAIR: JOHAN  
MAURITSSON**

Philip H. Bucksbaum, SLAC National Accelerator Laboratory

**"Filming quantum evolution with attosecond resolution"**





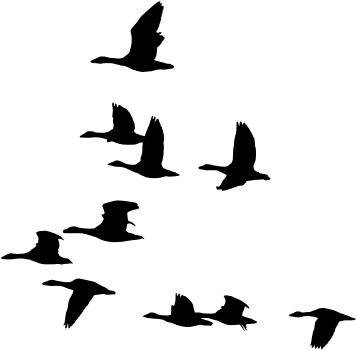
# LIST OF PARTICIPANTS

## SPEAKERS

Name	Affiliation
Philip H. Bucksbaum	SLAC National Accelerator Laboratory, USA
Joachim Burgdörfer	Vienna University of Technology, Austria
Zenghu Chang	University of Central Florida, USA
Dimitris Charalambidis	FORTH Inst. of Electronic structure & Laser, Greece
Paul Corkum	University of Ottawa, Canada
Louis F. DiMauro	Ohio State University, USA
Nirit Dudovich	Weizmann Institute of Science, Israel
Mette B. Gaarde	Louisiana State University, USA
Peter Hommelhoff	University of Erlangen–Nuremberg, Germany
Henry Kapteyn	Boulder University of Colorado, USA
Ursula Keller	ETH Zurich, Switzerland
Ferenc Krausz	Max Planck Institute of Quantum Optics, Germany
Stephen R. Leone	University of California Berkeley, USA
Franck Lépine	Claude Bernard University, France



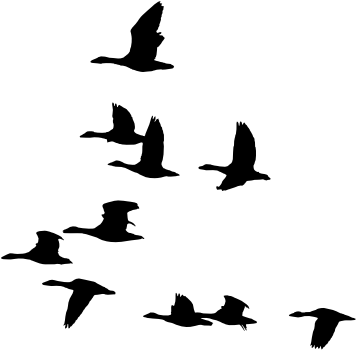




# LIST OF PARTICIPANTS

Name	Affiliation
Maciej Lewenstein	ICFO Institute of Photonic Sciences, Spain
Anne L'Huillier	Lund University, Sweden
Eva Lindroth	Stockholm University, Sweden
Jon Marangos	Imperial College London, UK
Agostino Marinelli	SLAC National Accelerator Laboratory, USA
Fernando Martín	Universidad Autónoma de Madrid, Spain
Katsumi Midorikawa	RIKEN, Center for Advanced Photonics, Japan
Margaret Murnane	Boulder University of Colorado, USA
Mauro Nisoli	Politecnico di Milano, Italy
Peter Oppeneer	Uppsala University, Sweden
Françoise Remacle	University of Liège, Belgium
Pascal Salières	CEA-Saclay, France
Giuseppe Sansone	Freiburg University, Germany
Kenneth J. Schafer	Louisiana State University, USA
Olga Smirnova	Max Born Institute, Germany
Marc Vrakking	Max Born Institute, Germany



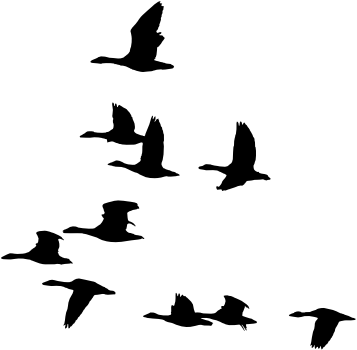


# LIST OF PARTICIPANTS

## YOUNG RESEARCHERS

Name	Affiliation
David Busto	Lund University, Sweden
Veronica Ideböhn	Gothenburg University, Sweden
Praveen Kumar Maroju	Lund University, Sweden
Leon Petersson	Stockholm University, Sweden
Ann-Kathrin Raab	Lund University, Sweden
Richard Squibb	Gothenburg University, Sweden
Rezvan Tahouri	Lund University, Sweden
Sajjad Vardast	Umeå University, Sweden
Robin Weissenbilder	Lund University, Sweden





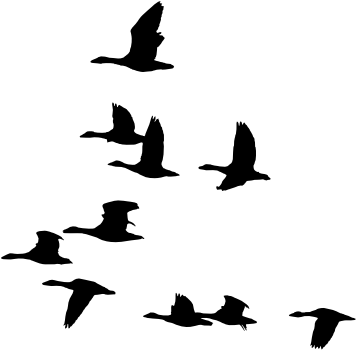
# LIST OF PARTICIPANTS

## ATTENDEES AND OBSERVERS

Name	Affiliation
Raimund Feifel	Göteborg University, Sweden
Mikhail Ivanov	Max Born Institute, Germany
Laszlo Veisz	Umeå University, Sweden
Igor Abrikosov	Royal Swedish Academy of Sciences
Mohamed Bourennane	Royal Swedish Academy of Sciences
Claes Fahlander	Royal Swedish Academy of Sciences
Tünde Fülöp	Royal Swedish Academy of Sciences
Anders Irbäck	Royal Swedish Academy of Sciences
Heiner Linke	Royal Swedish Academy of Sciences
Eva Olsson	Royal Swedish Academy of Sciences





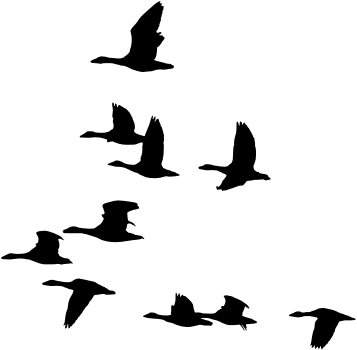


# LIST OF PARTICIPANTS

## LOCAL ORGANIZING COMMITTEE

Name	Affiliation
Cord L. Arnold	Lund University, Sweden
Marcus Dahlström	Lund University, Sweden
Per Eng-Johnsson	Lund University, Sweden
Mathieu Gisselbrecht	Lund University, Sweden
Anne L'Huillier	Lund University, Sweden
Eva Lindroth	Stockholm University, Sweden
Johan Mauritsson	Lund University, Sweden
Anne-Lise Viotti	Lund University, Sweden





# LIST OF PARTICIPANTS

## INTERNATIONAL ORGANIZING COMMITTEE

Name	Affiliation
Louis F. DiMauro	Ohio State University, USA
Ursula Keller	ETH Zurich, Switzerland
Maciej Lewenstein	ICFO Institute of Photonic Sciences, Spain
Fernando Martín	Universidad Autónoma de Madrid, Spain
Margaret Murnane	Boulder University of Colorado, USA
Pascal Salières	CEA-Saclay, France





