

## Commission C15: Atomic, Molecular and Optical Physics

Report (November 2021 – June 2022) to the IUPAP Council & Commission Chairs meeting

Submitted by Rosario González-Férez (Chair)

### **C15 officers:**

#### **Chair:**

Rosario González-Férez  
Departamento de Física Atómica, Molecular y Nuclear  
Facultad de Ciencias, Universidad de Granada,  
Avda. Fuentenueva SN, 18071 Granada, Spain  
Email: [rogonzal@ugr.es](mailto:rogonzal@ugr.es)

#### **Vicechair:**

Jimena D. Gorfinkiel  
School of Physical Sciences  
The Open University  
Walton Hall  
MK7 6AA Milton Keynes, United Kingdom  
Email: [Jimena.Gorfinkiel@open.ac.uk](mailto:Jimena.Gorfinkiel@open.ac.uk)

#### **Secretary:**

Jaewook Ahn  
Department of Physics  
Korea Advanced Institute of Science and Technology  
291 Daehak-ro, Yuseong-gu, Daejeon 34141, Korea  
Email: [jwahn@kaist.ac.kr](mailto:jwahn@kaist.ac.kr)

### **C15 Activities:**

The major activities from November 2021 to June 2022 are categorized into the following items.

#### **1. IUPAP C15 Early Career Scientist Prize 2022**

The Commission C15 in AMO Physics of the International Union of Pure and Applied Physics (IUPAP) has decided to award Ana Asenjo-García the Early Career Scientist Prize in AMO Physics 2022: “For her outstanding theory contributions to the understanding of fundamental physics associated with light-matter interactions in cold and ultracold atoms, the role of many-body optical phenomena, and their applications to quantum technologies.”

Ana Asenjo-García received her Ph.D. degree from Universidad Complutense de Madrid in 2014. She was a Marie Curie postdoctoral fellow at the Institute of Photonic Sciences (ICFO) in Barcelona, and an IQIM Fellow at the Institute of Quantum Information and Matter at Caltech. She joined Columbia University as an assistant professor of physics in 2019. Her research focus is on theoretical quantum optics and its intersection with atomic physics, quantum information science and many-body physics. In particular, the research program of her group is centered at understanding out-of-equilibrium physics of large quantum systems in open environments, with the aim of developing scalable and efficient applications in quantum information storage and processing, non-linear optics, and metrology. Besides her research activities, Prof. Asenjo-García is committed to making

science a more inclusive and diverse environment. To serve that purpose, she founded “Coding Club” at Democracy Prep Harlem High School, and actively participates in outreach and mentoring activities for under-represented communities in STEM.

## 2. Conference Support

We have recommended to support as Type A conference the [33rd International Conference on Photonic, Electronic and Atomic Collisions \(ICPEAC\)](#) to be held in Ottawa, Canada, from July 25th to August 1<sup>st</sup>, 2023.

## 3. IUPAP Photo Contest

A few photos representing AMO physics were selected for this contest.

## 4. Meeting of the C15 members.

A virtual meeting of the was held on January 20<sup>th</sup>,2022. The Chair informed the members about the EC&CC held in October 2021. We discussed:

- the conditions and rules applied for the organization of future conferences, with emphasis on the necessity to increase women participation as invited speakers,
- the Early Career Scientist Prize and possible actions so that nominations represent the whole international AMO Physics community in terms of gender, other under-represented groups and geographical regions,
- ways of ensuring the Call for nominations for Early Career Scientist Prize reaches as many relevant colleagues as possible, particularly those in countries that are not represented in the Commission.

## **Future schedule:**

- Rosario González-Férez will attend the 27th International Conference on Atomic Physics to be held in Toronto Canada, from 17 to 22 July 2022 where the ECSP will be awarded, and Ana Asenjo-García will deliver an invited talk.
- Most of the C15 members will not attend the 27th International Conference on Atomic Physics, thus the next C15 meeting will take place online and, most probably, in September 2022.