

Gender equality activities in CA18108: Quantum gravity phenomenology in the multi- messenger approach (QG-MM)

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IFIC, CSIC/Universitat de València

**COST ACADEMY WORKSHOP ON
GENDER EQUALITY IN RESEARCH AND INNOVATION
28 OCTOBER 2022, BRUSSELS**

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Presentation of the COST Action

CA18108: Quantum gravity phenomenology in the multi-messenger approach (QG-MM)

CSO approval: 13/11/2018
Start Date: 14/03/2019
End Date: 13/09/2023 (4 years and 6 months)

- **Main Aim:**

*Investigate **possible signatures** predicted by **quantum gravity models** in the **observation of different cosmic messengers**, by creating the conditions for a **close collaboration** between **theorists** and the **various experimental communities** involved in the detection of such cosmic messengers*

Keywords:

gamma-ray astronomy
cosmic neutrinos
ultra-high-energy cosmic rays
gravitational waves
Lorentz invariance violation and deformation

Key point to address the challenge:

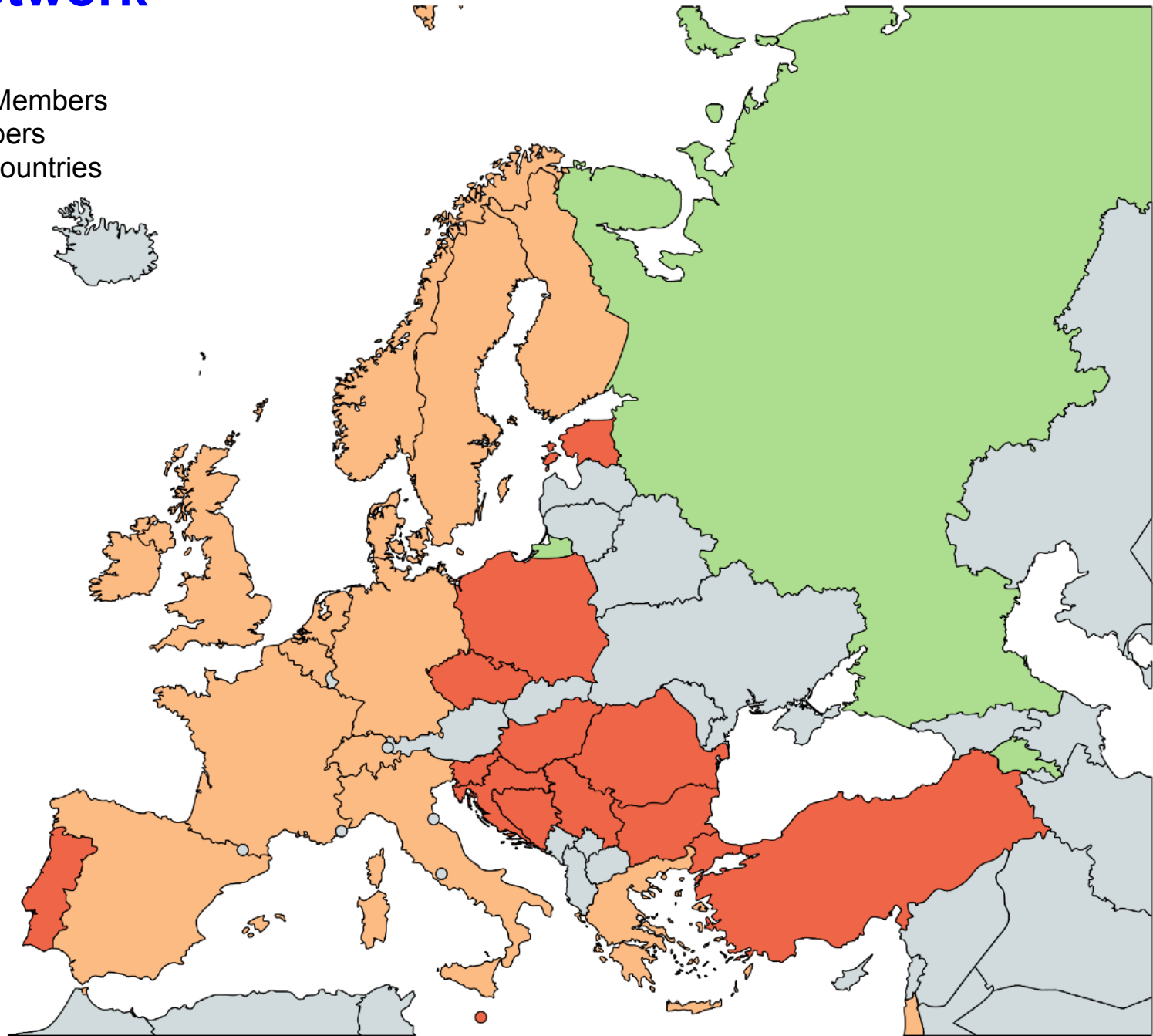
Join different communities

CA18108 Network

28 COST Members

- 15 Non-ITC COST Members
- 13 ITC COST Members
- 2 Near Neighbour Countries

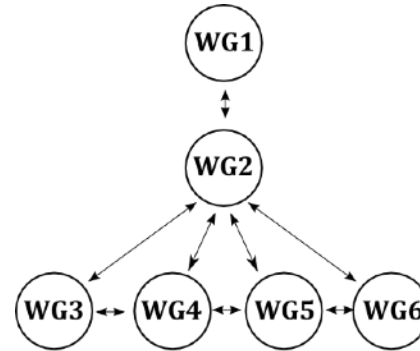
11 COST International Partner Countries
(Canada, Chile, China, Japan, USA, Kuwait, Iran, Mexico, Argentina, Brazil, Sudan)



CA18108 Coordination

Working Groups:

- **WG1:** Theoretical frameworks for gravity effects below the Planck energy
- **WG2:** Phenomenology of QG
- **WG3:** Gamma rays
- **WG4:** Neutrinos
- **WG5:** Cosmic rays
- **WG6:** Gravitational waves



Committees:

- Advisory committee for Training Schools and Annual Conferences
- Committee for outreach and gender activities
- Committee for the evaluation of STSM
- Committee for the evaluation of ITC Conference Grants

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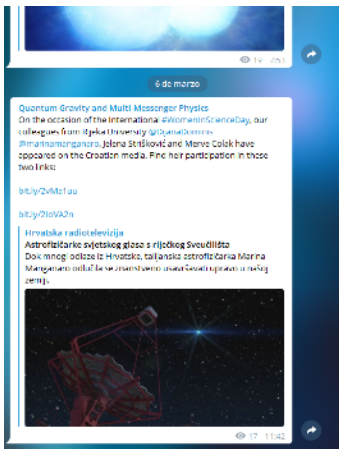
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- Committee for the evaluation of ITC Conference Grants

Core Group	
Action Chair	Jose Manuel Carmona
Action Vice-Chair	Giovanni Amelino-Camelia
Grant Holder Scientific Represent	Manel Martinez
Science Communication Manager	Mariam Tórtola
STSM Coord	Dijana Dominis Prester
ITC CG Manager	Julien Bolmont
WG1 Leaders	Christian Pfeiffer
	Giulia Gubitosi
WG2 Leaders	Flavio Mercati
	Stefano Liberati
WG3 Leaders	Tomislav Terzić
	Julian Sitarek
WG4 Leaders	Rodrigo Gracia Ruiz
	Carlos Pérez de los Heros
WG5 Leaders	Armando di Matteo
	Günter Sigl
WG6 Leaders	Tanja Hinderer
	Germano Nardini

CA18108 Information channels

Website: <https://qg-mm.unizar.es/>
 Facebook: [@COSTQGMM](#)
 Twitter: [@COST_QGMM](#)
 Instagram: [@cost_qgmm](#)
 Telegram: [@COST_QGMM](#)



QG-MM: COST Action CA18108

QUANTUM GRAVITY PHENOMENOLOGY IN THE MULTI-MESSENGER APPROACH



Group picture @ the kick-off meeting in Barcelona, October 2019

The exploration of the Universe has recently entered a new era thanks to the multi-messenger paradigm. The detection of cosmic particles (photons, neutrinos, cosmic rays), now joined by the birth of gravitational wave astronomy, gives us information about the different sources in the Universe and the properties of the intergalactic medium

The most energetic events allow us to test our physical theories at energy regimes which are not directly accessible in accelerators. This is in fact the target of quantum gravity phenomenology, a quite recent field of physics that tries to set phenomenological models that may incorporate some of the effects of the Planck scale, thus providing a bottom-up approach to the largely studied quantum gravity problem.

OUR GOAL

The main objective of the proposed COST Action is to gather theoretical and experimental working groups from the relevant communities (with proper geographical, age and gender balance) to work in the

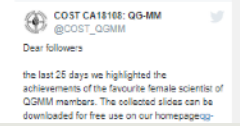
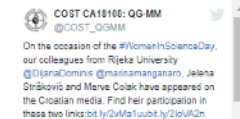
NEWS

- COST publishes a FAQ document concerning coronavirus impact on Action Grants
- COST CA18108 celebration of the International Day of Women and Girls in Science
- Universidad Nacional de La Plata joins CA18108 as IPC institution
- 3rd ITC Conference call is open
- Russia and Armenia join as Near-Neighbour Countries in COST Action CA18108

JOIN OUR PUBLIC TELEGRAM CHANNEL

[Quantum gravity and Multi-Messenger Physics](#): News on cosmology, particle and astroparticle physics (gamma-rays, neutrinos, cosmic rays and gravitational waves).

Tweets by @COST_QGMM



Our activities on gender equality

International Day of Women & Girls in Science 2020

International Day of Women and Girls in Science

My favourite female scientist



Lise Meitner (1878-1968)

- Nuclear physicist who discovered nuclear fission and protoactinium
- She refused joining the Manhattan Project to create the atomic bomb
- 48 times nominated to the Nobel Prize but never awarded
- Element 109 (Meitnerium) was named in her honor



<http://qg-mm.unizar.es/>

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 @COSTQGMM

 @COST_QGMM

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EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY


EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY



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International Day of Women & Girls in Science 2020



CA18108

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24 members of the
Action participated
presenting their favourite
female scientist

The slides were
published on our **social
media** (FB, TW) and at
some research centers

International Day of Women and Girls in Science My favourite female scientist





Laura Bassi (1711-1788)


- Italian physicist and academic, first woman in the world to be appointed a university chair in a scientific field of studies (University of Bologna, 1732), and second woman to earn a philosophy doctorate after Elena Cornaro Piscopia in 1678, fifty-four years prior
- She was a key figure in spreading the study of Newtonian mechanics through Italy. She also carried out experiments of her own in all aspects of physics, giving also private lessons
- In her lifetime, she was the author of 28 papers, the majority of these on physics and hydraulics. Only four of her papers were printed



<http://qg-mm.unizar.es/>

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 @COST_QGMM

All the slides are
available in the
Diversity section of our
website



International Day of Women & Girls in Science 2021

11F International Day of Women and Girls in Science

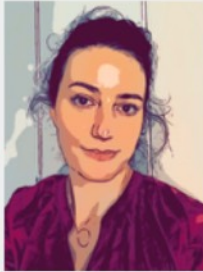


Jelena Strišković
PhD student
CROATIA

- **PhD student** at University of Rijeka
- **Teaching assistant** at J. J. Strossmayer University of Osijek
- **Research** interests include experimental searches for **Lorentz invariance violation** using very high energy gamma rays
- **Member** of **MAGIC** and **LST** collaborations and COST Action **CA18108**
- **Booklover** (SF, fantasy, dystopian, contemporary...)

International Day of Women & Girls in Science 2021

11F International Day of Women and Girls in Science



Giulia Gubitosi
Researcher
Università di
Napoli Federico II
ITALY

- **Researcher** at University of Naples "Federico II".
- **Research interests** include **quantum gravity** (Lorentz symmetry violations, noncommutative geometry) and **quantum gravity phenomenology, early universe cosmology** (Cosmic Microwave Background, Inflation).
- **Core group member and Working Group vice-leader** of COST Action CA18108.
- **Gravity Research Foundation Award** for essays on gravitation, **Campus de Excelencia Internacional Fellow**, "Sapienza" **University of Rome Excellence award**, **Della Riccia Foundation Fellow**.



15 female members of the Action participated presenting their profile

The slides were published on our **social media (FB, TW, Telegram)** and at some research centers

All the slides are also available in the **Diversity** section of our **website**



11F International Day of Women and Girls in Science



Denise Boncioli
Researcher at the Department of Physical and Chemical Sciences, University of L'Aquila, Italy

- **Researcher** at University of L'Aquila.
- **Research interests** include **Cosmic-Ray and Neutrino Phenomenology** (interactions and propagation of ultra-high energy cosmic rays, multimessenger aspects, sources of high-energy neutrinos, exotic physics with cosmic rays).
- **Member of the Pierre Auger Collaboration**, since 2019 **Leader of the Cosmic-Ray Phenomenology** task force.
- Actively involved in the **study of the gender balance** at the University of L'Aquila.
- Member of **COST Action CA18108**



International Day of Women & Girls in Science 2022

Report on Gender Balance in our COST Action



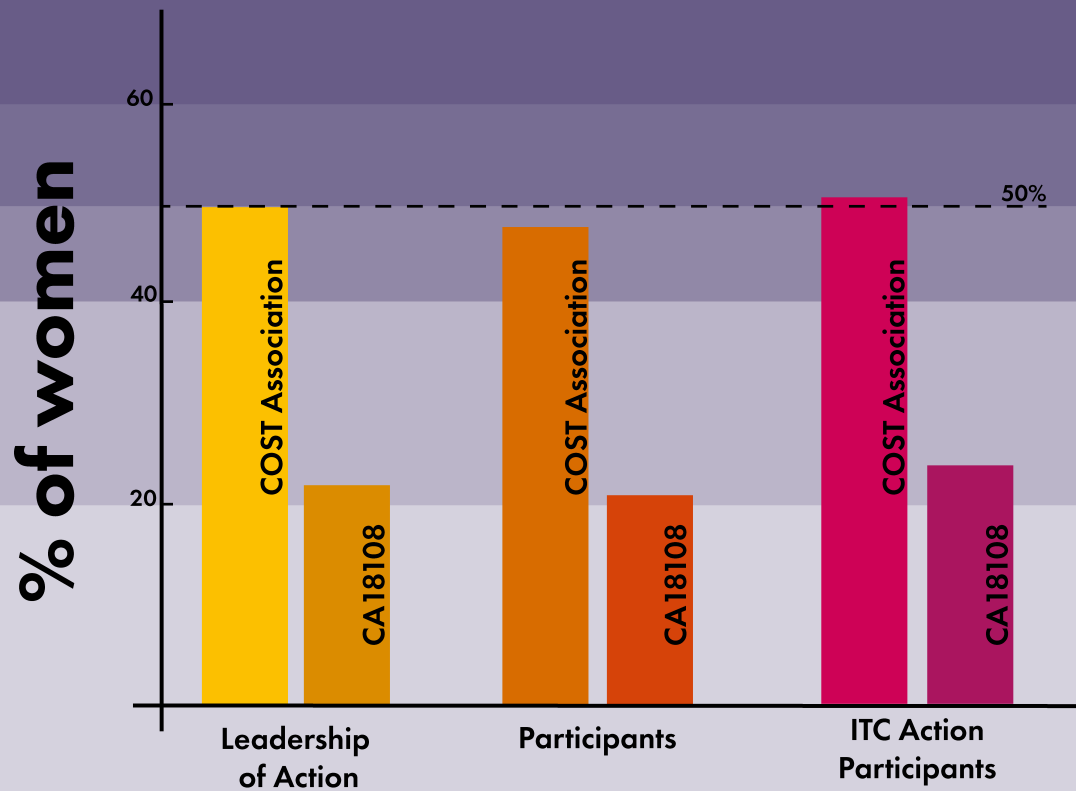
COST ACTION CA18108:

ON THE GENDER GAP

International Day of Women & Girls in Science 2022

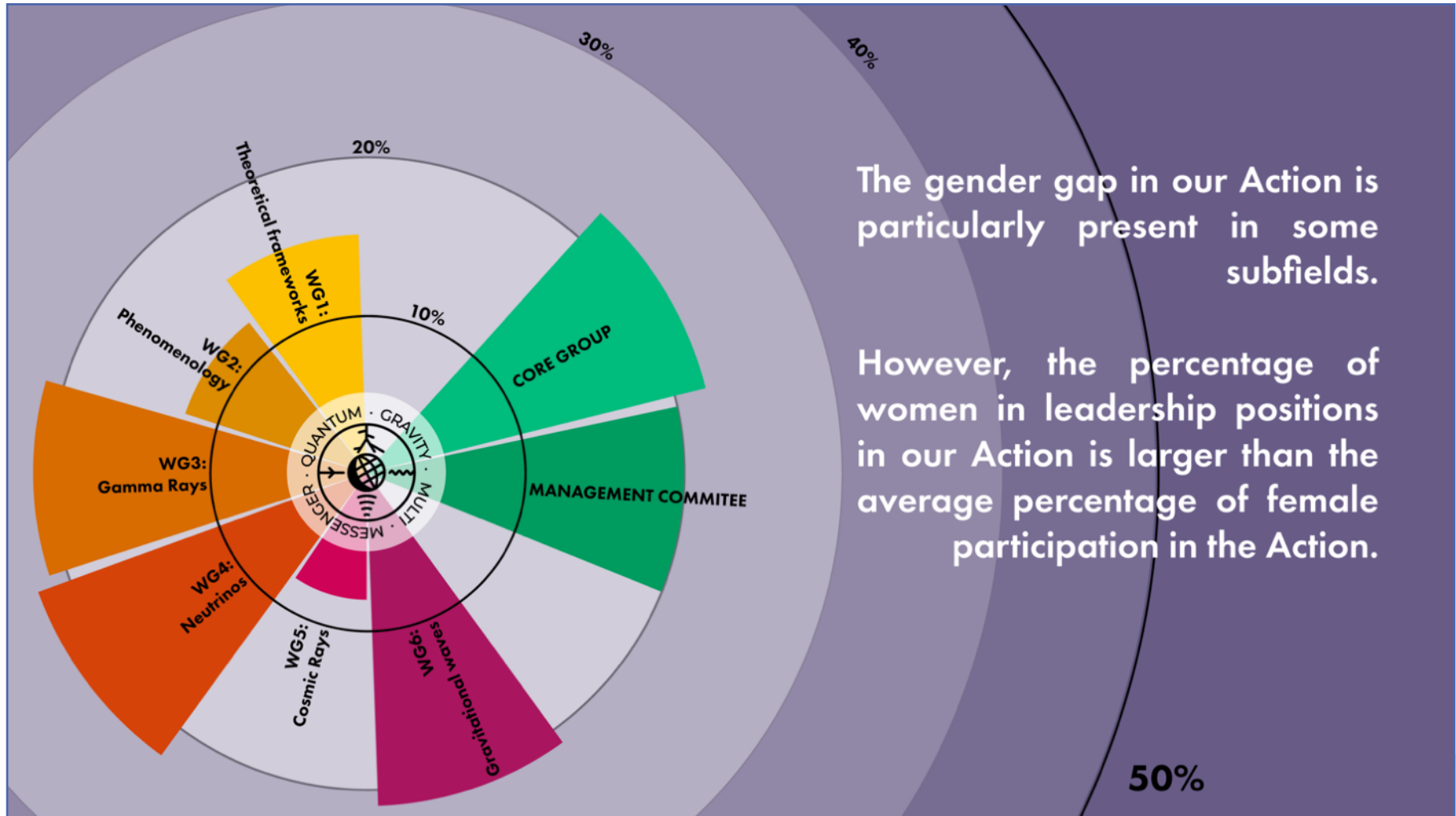
Report on Gender Balance in our COST Action

The gender gap, which is particularly large in the field of physics, clearly manifests in the statistics of the COST Action CA18108.



International Day of Women & Girls in Science 2022

Report on Gender Balance in our COST Action



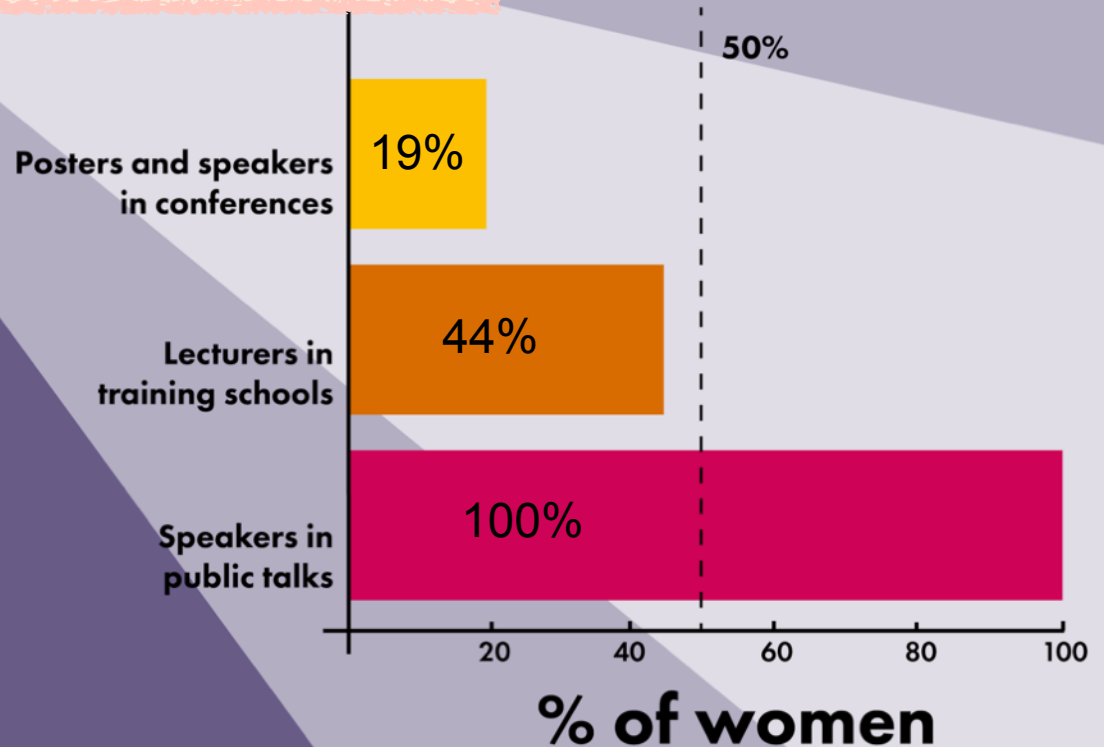
International Day of Women & Girls in Science 2022

Report on Gender Balance in our COST Action



Beneficiaries of STSM: 29%

We highlight the large participation of women as lecturers and invited speakers in Action events, as result of the gender equality policy of the Management Committee of the Action.



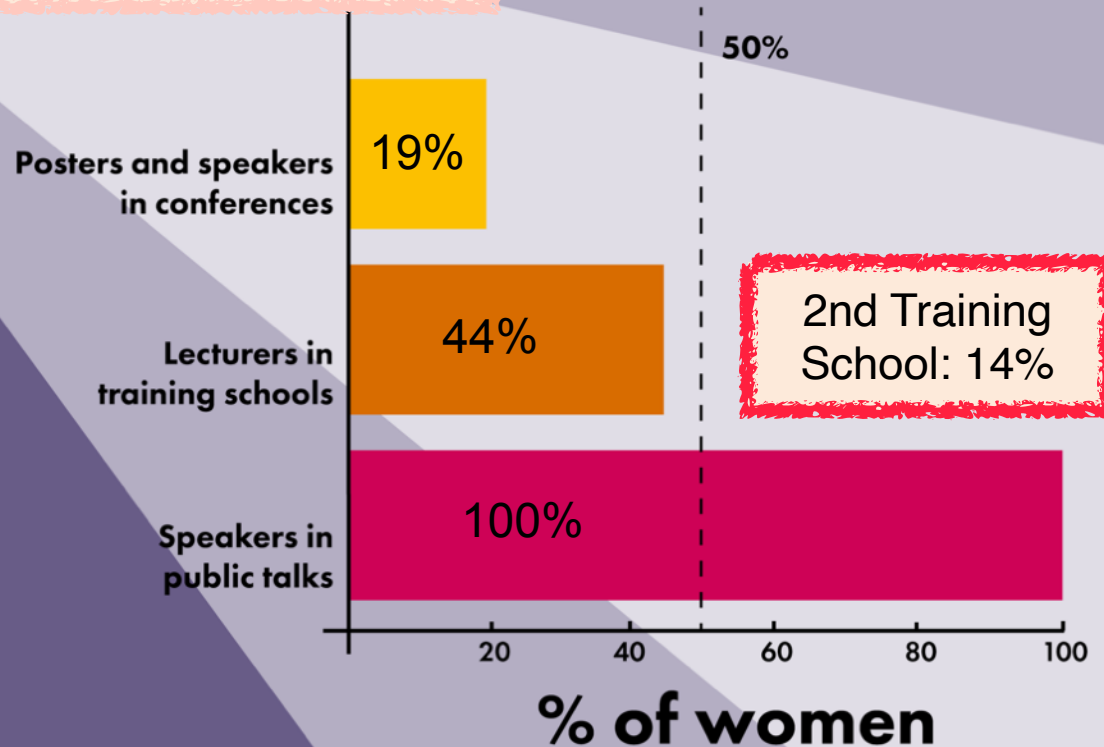
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Public talks organized by the COST Action

Prof. Astrid Eichhorn
(CosmoCaixa, Barcelona,
October 2019)



Prof. Licia Verde (Parque de las
Ciencias, Granada, March 2020)



Thanks for your attention!