



MW-Gaia WG4-WG1 Workshop

Gaia – Beyond the Milky Way

Athens (Greece), 27th-29th September 2022

The workshop [Gaia – Beyond the Milky Way](#) held in Athens (Greece), from 27th to 29th September 2022.

This was the third workshop of the CA18104 COST Action MW-Gaia and the first workshop of the Working Group 4 (WG4). The format of the workshop was based on invited reviews and contributed talks.

Scientific motivation of the workshop

This is a hybrid workshop that was held in Athens, Greece, on the 27th, 28th and 29th of September 2022. It provided the opportunity to discuss the impact of the Gaia mission, and especially of Gaia Data Release 3 (DR3), on extragalactic science. That was particularly timely, as DR3 (released on 13th of June 2022) included results on galaxies and quasars, for the first time. All talks are linked in the webpage of the workshop.

The workshop covered three aspects of extragalactic science with Gaia, starting with the expected improvement of the distance scale. DR3 includes light curves of thousands of variables, customarily used for distance determinations and is expected to have a major impact on the field. The second aspect is the study of resolved nearby galaxies (in the Local Group), including the Magellanic Clouds, MW dwarf satellites and the M31 group. Our understanding of the kinematics and dynamics of our local galaxy environment has been revolutionized by the wealth and accuracy of Gaia data. The third aspect is novel in DR3, which includes, for the first time, over 100 thousand low-resolution, flux-calibrated spectra of quasars and unresolved galaxies. There was also a hands-on training session for young scientists to familiarize themselves with accessing and utilizing Gaia DR3 data, particularly the new products.

Day One

After the Welcome address by Nicholas Walton (Cambridge) there were two invited talks:

- ✓ “Gaia Data Release 3, an overview” Antonella Vallenari (Padova)
- ✓ “AGIS, DR3 astrometry and various calibration issues” Alex Bombrun (Madrid)

After the coffee break, there were one invited and two contributed talks:

- ✓ “Overview of MW/LMC interaction” Eugene Vasiliev (Cambridge)
- ✓ “Chemical abundance distributions of dwarf galaxies in Milky Way-mass systems” Andrea S. Font (Liverpool)
- ✓ “Study of internal kinematics of the SMC using Gaia DR3 data” Achilleos Strantzas (Athens)

Day Two

The second day began with an invited talk and two contributed:

- ✓ “Magellanic Clouds – dynamics and evolutionary phases” Mercè Romero-Gomez (Barcelona)
- ✓ “Star clusters in the Magellanic Clouds using DBSCAN with Gaia DR3 data” Dimitris Lazarou (Athens)
- ✓ “Potential of Gaia to constrain Primordial Black Holes using astrometric microlensing” Himanshu Verna (Bombay)

After the coffee break, two more invited talks:

- ✓ “The Milky Way dwarf galaxies view through Gaia” Guillaume Thomas (Tenerife)
- ✓ “Impact of Gaia data on studies of the Andromeda System” Nicolas Martin (Strasbourg)

After lunch there were one invited and three contributed talks:

- ✓ “Gaia and the distance ladder Vincenzo Ripepi (Naples)
- ✓ “An overview of the extragalactic content of Gaia DR3” Coryn Bailer-Jones (Heidelberg)
- ✓ “Redshifts of unresolved galaxies with Gaia Ioannis Bellas-Vellidis, Despina Hatzidimitriou, (Athens)
- ✓ “Towards an improved semi-empirical library for UGC. Construction of galactic spectra using the Pegase.3 code and comparison with SDSS” Pavlos Patsonis, Evdokia Livanou (Athens)

The day finished with a hands on session on exercises for the use of Gaia DR3.

Day Three

The third day began with two invited talks:

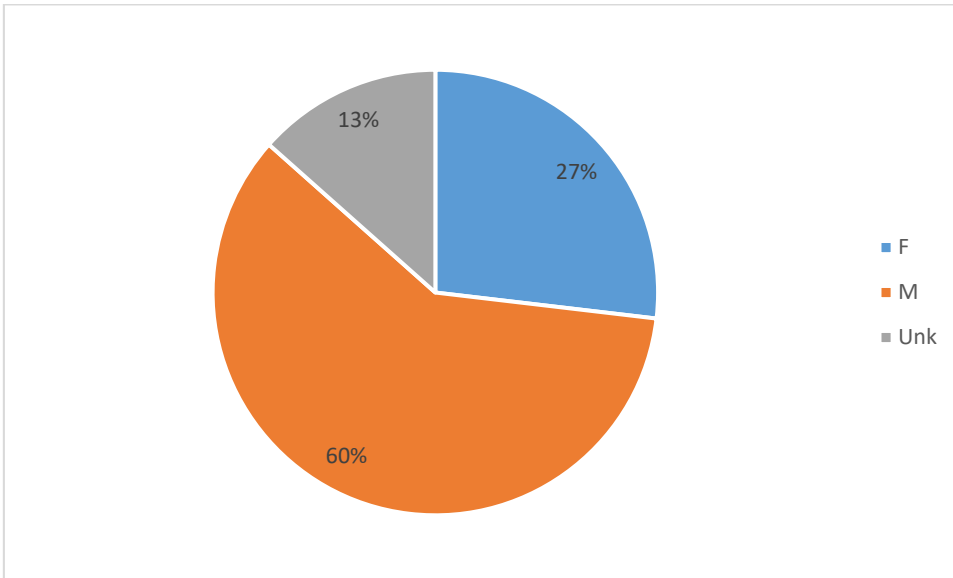
- ✓ “Gaia explores the deep Universe: morphology of galaxies and host galaxies of quasars and search for gravitational lenses” Christine Ducourant (Bordeaux)
- ✓ “The Celestial Reference Frame” François Mignard (Nice)

And after the coffee-break five contributed talks followed:

- ✓ “Optical polarization properties of AGN with significant VLBI-Gaia offsets” Dmitry Blinov (Heraklion)
- ✓ “Variation of the stellar initial mass function in and between galaxies” Sami Dib (Heidelberg)
- ✓ “Characteristic Emission of Star-Forming High Redshift Galaxies: Testing the IR Template” Jana Bogdanoska (Skopje)
- ✓ “Multi-wavelength study of the environment of AGNs using XMM-Newton and Gaia data” Elias Koulouridis (Athens)
- ✓ “Comparison of Gaia BP/RP spectra with Low-dispersion Spectroscopy photographic Sky Surveys” Rene Hudek (Prague)

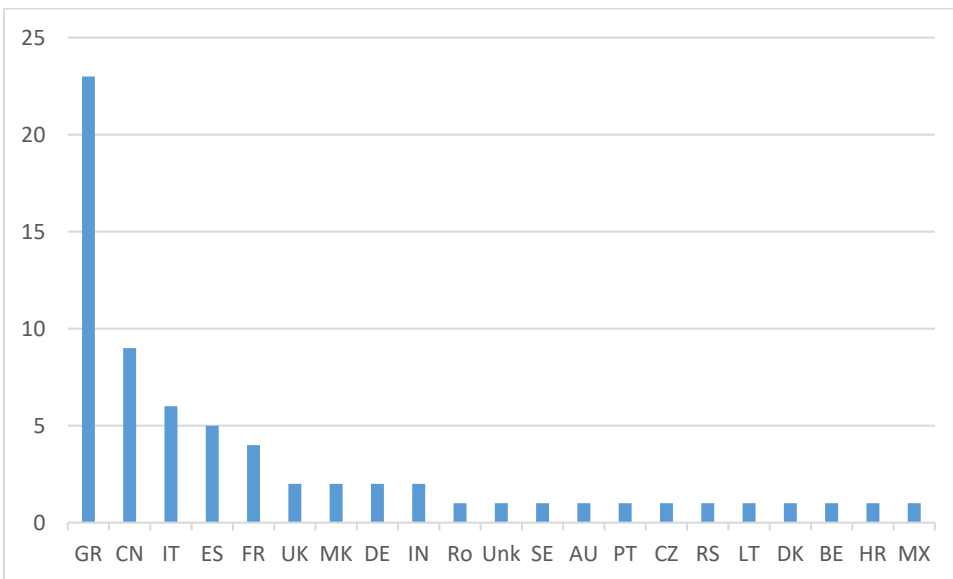
And the final “Summary – Closing Remarks” by Nicholas Walton (Cambridge).

The workshop in numbers



The workshop was attended by 67 researchers (3 remotely), 27% of them female.

The SOC and LOC had a 50 (3 out of 6) and a XX% (XX out of 7) of female researchers respectively.



There were researchers from 20 different countries in Europe (mostly Greece), Mexico, China, India and Australia.

There were 21 presentations. 33% of female participants presented while 38% of male participants did. There were 9 Invited talks (3 33% female) and 12 Contributed talks (3 25% female).

Report prepared by Lola Balaguer-Núñez.

