

PERSONAL INFORMATION

Name: Alessandra Mastrobuono-Battisti

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URL for website: <https://alessandramb.github.io/>

Family status: Married, 2 children

RESEARCH, CAREER AND LEADERSHIP HIGHLIGHTS

I am a leading contributor to the study of the formation and chemo-dynamical evolution of dense stellar systems – such as globular and nuclear clusters – in galaxies. I model these systems using N -body codes run on GPUs, including my own code, *NBSymple* (<https://github.com/alessandramb/NBSymple>). I am interested in the origin of their stellar populations and compact objects, and in the study of the dynamical processes that shaped their current structural properties. On planetary scales, I solved the long-standing Earth-Moon composition similarity issue (Mastrobuono-Battisti et al. 2015, *Nature*). This work has been followed by multiple (> 50) press releases. **I am the globular cluster expert within the ESA Gaia consortium** and I am a **member** of the **ESO/ELT MOSAIC Science Team**. In the past I have gathered extensive experience as a supervisor: I have co-supervised **4 PhD students (5 refereed publications)**, 2 Master's students and a Bachelor's student (1 submitted publication). All these students have successfully graduated. I am **currently** co-supervising **3 PhD students (3 refereed publications)**, two in Paris, one at INAF, in Italy) and a Master's student in Paris. I have managed to attract funds for more than 500,000EUR in Europe, Israel, US. I have been the PI, Co-PI and CO-I of numerous computing (500,000 GPU hours as a PI) and observing (including HST) proposals. I have more than 3800 citations (271.6 normalized) in Q1 journals, with an h-index of 22.

Keywords: Stellar dynamics, dense stellar systems, globular clusters, galactic nuclei, stellar populations, black holes, Milky Way, gravitational waves, numerical simulations, GPUs

CURRENT POSITION

2021 – **Marie Curie Fellow & H2020 MSCA Group Leader**, GEPI, Observatoire de Paris (France)

Maternity leave (Nov 2022 – March 2023)

PAST POSITIONS

2020 – 2021 **Researcher**, Lund Observatory, Lund (Sweden)

Maternity leave (Feb 2020 – Oct 2020)

2015 – 2019 **Independent Research Fellow (MPIA prize fellowship)**, Galaxies and Cosmology Department, Max-Planck-Institut für Astronomie, Heidelberg, Germany

2012 – 2015 **Postdoctoral Fellow (Lady Davis Fellowship)**, Physics Department, Technion-Israel Institute of Technology, Haifa, Israel

EDUCATION

2012 **PhD in Astronomy**; Classification: Excellent;
Department of Physics and Astrophysics, Sapienza University of Rome, Italy
Supervisor: Prof. Roberto Capuzzo-Dolcetta

2008 **Master's Degree in Astronomy and Astrophysics**
Grade: 110/110 summa cum laude;
Department of Physics and Astrophysics, Sapienza University of Rome, Italy

2006 **Bachelor's Degree in Physics and Astrophysics**
Grade: 110/110 summa cum laude;
Department of Physics and Astrophysics, Sapienza University of Rome, Italy

FELLOWSHIPS AND GRANTS

- 2021 – 2023 **Horizon 2020 MSCA Individual Fellowship (200,000EUR, THESYS, grant agreement No 895174).** Project title: “THESYS: The build-up and fate of self-gravitating systems in the Universe”. Grant agreement No 895174. Host institution: **GEPI, Observatoire de Paris.**
- 2015 – 2019 **MPIA Prize Fellowship (250000 EUR).** Project Title: “Globular and nuclear clusters across the Universe.” Host institution: Galaxy and Cosmology Department, Max-Planck-Institut-für-Astronomie, Heidelberg, Germany.
- 2012 – 2014 **Lady Davis Fellowship (18 000 USD).** Fellowship awarded to the most talented postdoctoral scholars of the Hebrew University and of the Technion. Host institution: **Technion, Israel.**
- 2012 **HPC-Europa2 grant (3000 EUR).** Eight-week visit to a foreign institution, 50000 CPU hours and unlimited GPU hours for 3 months, on GENCI/CINES resources. Project Title: “Globular cluster evolution in the Galactic field”. Host institution: **Paris Observatory.**
- 2008 – 2011 **PhD Scholarship (60 000 EUR).** Project Title: “Globular clusters and galactic nuclei”. granted by the Italian Ministry of Education, University and Research. Host institution: Sapienza University of Rome.

PRIZES AND AWARDS

- 2016 **“Imagine”** prize for the outstanding scientific career, awarded by “Associazione Immagine”, Latina, IT. Annual award for outstanding scientists (10/12/16).
- 2016 **“Lievito 2016”** prize, awarded by “Associazione Lievito”, Latina, IT. Annual award for outstanding scientists (25/04/16).
- 2015 **“Latina va in Scena”** prize for the outstanding scientific achievements. Award from Latina County in Italy (28/06/15).
- 2015 **Formal recognition (in Italian: “Menzione d’onore”)** from the city of Pontinia (25/05/15).
- 2011 Prize for one of the five best talk abstracts, Cefalù Meeting 2011.

SUCCESSFUL FUNDING PROPOSALS

- 2020 **PI** for the Marie Curie Standard Individual Fellowship proposal (**200000 EUR, Feb. 2020**).
- 2017 **Co-PI** for a conference proposal funded by the German Research Foundation (DFG) through the Collaborative Research Centre (SFB 881) “The Milky Way System”, **11 000 EUR** granted for the organisation of the successful international conference **“Survival of dense stellar clusters in the Milky Way system”**, Heidelberg, 19-23 Nov. 2018.
- 2016 **Co-I** for the DAAD–PPP proposal “Visitors to Our Neighbourhood: Identifying and exploiting accreted star clusters in the Milky Way’s halo”, PI: Ryan Leaman, **30 000 EUR.**
- 2016 **Co-I** for two SFB881 conference-funding proposals for: **i)** the international workshop “The exciting lives of galactic nuclei”, 27/02-03/03/2017, Ringberg Castle and **ii)** the international conference “Piercing the Galactic darkness: Stellar populations in highly extincted regions of the Milky Way”, 16-19/10/2017, Heidelberg (**20 000 EUR**).
- 2016 **PI and Co-I** for several SFB881 funding proposals for MPIA visitors (**~10 000 EUR**).
- 2015 **PI** for an **MPIA Fellowship** proposal to join the Max-Planck-Institute for Astronomy (Heidelberg, Germany) “Galactic Nuclei” group led by N. Neumayer as an independent researcher (**~250 000 EUR**).
- 2012 **PI** for a **Lady Davies Fellowship** proposal to join the AstroTech group led by H. Perets at the Technion (Israel; **18 000 USD** to support living expenses).
- 2011 **PI** for an HPC-Europa2 proposal (see Fellowships and Grants, **3 000 EUR**).

SUCCESSFUL COMPUTING AND OBSERVING TIME PROPOSALS

- 2021 **PI** of a SNIC computing proposal, granted resources 120,000 GPU/CPU hours on Swedish supercomputers. Project: “The origin of the Galactic nucleus”.

- 2020 **Co-I** for the **Hubble Space Telescope proposal Cycle 28** observing proposal “Digging into the mystery of the Galactic globular clusters M22 and NGC1851” (PI: Annalisa Calamida, STScI).
- 2017 **Co-PI** for a CINECA proposal, granted resources: 200000CPU/GPU hours (for 9 months). Project: “Formation of nuclear clusters through mergers of a realistic population of globular clusters”.
- 2014 **Co-PI** for a LinkSCEEM/Cy–Tera proposal, granted resources: 12000 GPU hours available for 12 months. Project: “Formation and evolution of dense stellar clusters”.
- 2014 **Co-I** for a GEMINI proposal, “The Milky Way nuclear star cluster as a benchmark for the structure and build-up of galactic nuclei” (PI: Anja Feldmeier-Krause, ESO).
- 2011 **Co-I** for a CFHT proposal, “The extended tidal tails of Palomar 14” (PI: Prof. D. Valls-Gabaud, Observatoire de Paris).

SUPERVISION OF STUDENTS

7 PhD students co-supervised or mentored, 3 Master’s students and 1 Bachelor student supervised.

2023 – ongoing

Co-Supervisor (50%; with P. Di Matteo): **Master’s student Eliot Stein** (GEPI). Project: “Dynamical fate of globular and open clusters in the Milky Way”.

2022 – ongoing

- (1) **Co-supervisor** (30%, with P. Di Matteo, GEPI): **PhD student Salvatore Ferrone**. Project: “The tidal evolution of Galactic globular clusters”. **One paper published:** Ferrone, S. Di Matteo, P., **Mastrobuono-Battisti, A.** et al., 2023, accepted in A&A, arXiv:2301.05166.
- (2) **Supervisor** (100%; graduated: 04/10/2022, GEPI): **Master’s student Lisa Delit** (ELISA Aerospace). Project: “Globular cluster disruption and the link with the Galactic nucleus” (funded through my grant).
- (3) **Co-supervisor** (50%, with A. Milone, Padova Uni.; graduated 12/10/2022): **Master student Mariasole Maglione**. Project: “Multiple populations in globular clusters”, GEPI, Paris, paper in prep.

2021 – ongoing

- (1) **Co-supervisor** (25%, with F. Calura, INAF-Bologna): **PhD student Elena Lacchin**. Project: “Mass loss in Magellanic Clouds Globular Clusters”. **One paper published:** Lacchin, E., Calura, F., Vesperini, E., **Mastrobuono-Battisti, A.**, 2022, **MNRAS**, **517**, 1171.
- (2) **Co-supervisor** (30%, with P. Di Matteo, GEPI): **PhD student Giulia Pagnini**. Project: “The early and late evolution of our Galaxy through the lens of globular clusters”. **One paper published:** Pagnini, G., Di Matteo, P., Khoperskov, S., **Mastrobuono-Battisti, A.** et al., 2023, A&A, accepted for publication, arXiv:2210.04245

2017 – 2021 **Co-supervisor** (45%, with G. van de Ven and A. Sippel; graduated on 06/07/2021): **PhD student Francisco Aros**. Project: “Intermediate mass black holes in globular clusters”, MPIA, Germany. Graduated in July 2021 (magna cum laude). **Two published papers:**

1. Aros, F., Sippel, A., **Mastrobuono-Battisti, A.**, et al., 2020, **MNRAS**, **499**, 4646
2. Aros, F., Sippel, A., **Mastrobuono-Battisti, A.**, et al., 2021, **MNRAS**, **508**, 4385.

2017 – 2018 **Supervisor** (100%, graduated on 19/06/2018): Bachelor student **Robin Herlan**. Project: “Dark matter density profiles in dwarf galaxies: the case of Sagittarius”, MPIA, Heidelberg, Germany. Submitted paper: **Herlan, Mastrobuono-Battisti, Neumayer**, **MNRAS**, submission ID: MN-21-4049-MJ.

2012 – 2017

- (1) **Danor Aharon** (10%, Technion, Israel, graduated in 2016). **One paper published:** Aharon, **Mastrobuono-Battisti** et al. 2016, **ApJ**, **823**, 137.
- (2) **Athanasia Tsatsi** (30%, MPIA, Germany, graduated in 2016). **One paper published:** Tsatsi, **Mastrobuono-Battisti** et al. 2017, **MNRAS**, **464**, 3720;

- (3) **Federico Abbate** (20%, Milan University, Italy, graduated in 2019). **One paper published:** Abbate, **Mastrobuono-Battisti** et al. 2018, **MNRAS**, **473**, **927**.

TEACHING EXPERIENCE

- 2022 **Lab insertion module lecturer**: “Dynamical evolution and fate of globular clusters in the Milky Way”, 1st year Master Course. Two students, 40h.
- 2021 **Lecturer**, 1st year Master Course, “High-Energy Astrophysics”, Lund Observatory (Sweden). 15 students, 15h.
- 2020 **Lecturer**, 1st year Master Course, “Stellar Structure and Evolution”, Lund Observatory (Sweden). 15 students, 3h;
- 2009 – 2010 **Teaching Assistant**, 3rd year Bachelor Course, *Numerical Methods in Astronomy*, Department of Physics and Astrophysics, Sapienza University of Rome, Italy. 50 students, 35h

MAJOR REVIEWING ACTIVITIES

- Expert reviewer: **Hubble Space Telescope Cycle 30 TAC** (External Stellar Populations Panelist, 2023).
- Referee for a number of **IOP Journals** as well as **MNRAS** and **A&A** (since 2013).

INSTITUTIONAL RESPONSIBILITIES

- 2022 – Member of the **ESO/ELT MOSAIC Science Team**.
- 2021 – **Co-organiser** of the “Paris Observatory Joint Galaxies and Cosmology Seminar”: <https://ggsapi.obspm.fr/seminars/>.
- 2021 **Referee and panel member** for the examination and evaluation of a **Master’s Thesis** (Lund, Sweden).
- 2021 **Referee and panel member** for the examination and evaluation of a **Bachelor’s Thesis** (Lund, Sweden).
- 2018 – Member of **Gaia DPAC consortium (CU6 group)**, responsible for the **validation of the spectroscopic data in globular clusters**.
- 2017 **Main organiser for one conference** and **SOC member for 7**. Chair of the LOC for one conference, LOC member for 2 conferences.
- 2016 – 2021 **Weekly group meetings organiser and chair** (Sweden and Germany).
- 2016 – 2019 Member of several **committees for the selection of future postdocs, PhD students, and internship students**, MPA, Heidelberg, Germany.

ORGANISATION OF SCIENTIFIC MEETINGS

- 2023 **Co-Chair of the SOC and Co-I of the proposal** for the **EAS Special Session** “Understanding the connection between nuclear star clusters, black holes and galaxy evolution: merging observations and simulations”, **Kraków, Poland** (10-14/07/2023).
- 2021 **SOC member** for the conference “Multiple stellar populations in the next decade” (to be held in Padova, Italy, delayed due to the covid outbreak, <https://indico.ict.inaf.it/event/994/>)
- 2019 **SOC member and Co-I of the proposal** for the **EWASS special session** “The dynamics of stellar clusters”, Lyon (24-28/06/2019).
- 2018 **Principal organiser, chair of the SOC and PI of the funding proposal** for the conference “Survival of dense stellar clusters in the Milky Way system”, 85 participants, Heidelberg, Germany (19-23/11/2018).
- 2017 **(1) SOC member, discussion moderator and LOC co-chair** for the meeting: “Piercing the Galactic darkness”, 70 participants, Heidelberg, Germany (16-19/10/2017). **(2) Principal organiser, SOC and LOC member** for the MPA Galaxy and Cosmology Department annual retreat, 90 participants, Schöntal, Germany (22-24/05/2017). **(3) SOC member and discussion moderator** for the meeting: “The exciting lives of galactic nuclei”, 40 participants, Ringberg, Germany (27/02-03/03/2017).
- 2011 **LOC member** for the meeting: “Advances in Computational Astrophysics: methods, tools and outcomes” 2011, 80 participants, Cefalù, Italy (13-17/06/2011).

PUBLICATION SUMMARY: 3838 citations (3667 without self-citations, ADS, as of 03/2023)

- *h*-index: 22;
- **58** publications in peer-reviewed, high impact-factor journals:
- **10** as the **first author** including: 1 Nature paper as the first author; **16** as the **second or third author**.
- 14 conference proceedings (10 refereed, 8 as the first author).

PUBLIC LECTURES, TALKS AND SEMINARS SUMMARY

- 9 invited talks at conferences (since 2014).
- 12 public outreach seminars/lectures (including a TED^x talk, since 2015).
- 20 invited colloquia/seminars at international institutes (since 2012);
- More than 50 press interviews, including 2 on gender equality that led to the publication of books on this subject :
<https://blog.redooc.com/storie-di-donne-il-senso-delle-donne-per-la-scienza/>
<https://www.donnamoderna.com/news/speciali/donne-come-noi/donne-come-noi-il-libro>
- 29 contributed talks at conferences (since 2010).

PUBLIC LECTURES (12 lectures)

- 2022 Teachers Training lecture: “Moon Camp”, <https://www.esero.it/eventi/>, Napoli, Italy (11/11). This is a lecture organised within the educational ESA/ASI program *ESERO Italia*, created to support learning and teaching of science and technology.
- 2021 Astronomisk Ungdom Space Research School lecture for high school students, Lund, Sweden (27/07)
- 2019 Public lecture on the origin of the Universe and of the solar system, Latina, Italy (26/10)
- 2019 Public talk on the origin of the Moon and of the solar system, Florence, Italy (23/07)
- 2019 Lectio Magistralis for the 50th Anniversary of Apollo 11 Moon Landing, Latina, Italy (20/07)
- 2018 **TED^x Castelfranco talk**: “Scientific puzzles: the formation of the Moon”, Castelfranco Veneto, IT (06/10).
- 2016 Invited public lecture for high school students in Latina, IT (25/04).
- 2016 Invited public lecture for university students in Latina, IT (26/04).
- 2015 Invited public lecture at the Italian cultural centre in Haifa, IL (29/06).
- 2015 City Hall lecture for the Mayor and City Council, Pontinia, IT (25/05).
- 2015 Invited public lecture for secondary school students, Pontinia, IT (25/05).
- 2015 Invited public lecture at the Italian cultural centre in Tel Aviv, IL (04/04).

INVITED CONFERENCE TALKS (9 talks)

- 2023 **Invited Talk**. “A multi-wavelength view on globular clusters near and far: from JWST to the ELT”, Sexten, Italy, 3-7/07. **Title**: “Modelling the origin of multiple populations in globular clusters.”
- 2023 **Invited Talk**. “Phases Of Galactic Evolution As Traced By Stellar Populations And Star Clusters”, Sexten, Italy, 26-30/06. **Title**: “Modelling the origin of multiple populations in globular clusters.”
- 2022 **Invited review talk**. “The Puzzles of the Galactic Centre”, Heidelberg, Germany, 5-7/09. **Title**: “The Galactic nuclear star cluster and supermassive black hole formation and co-evolution: where do we stand?”. During the same conference, **I led a discussion section** as an expert on nuclear star cluster formation and evolution.
- 2019 **Invited talk**. “Uncovering the Physics of Formation of Globular Clusters and their Host Galaxies”, KITP, Santa Barbara, US, 11-14/05, postponed due to the Covid19 outbreak. **Title**: “The dynamics of merging globular clusters”.
- 2018 **Invited talk**. “Multiple populations in Globular clusters”, Sexten, Italy, 09-13/07. **Title**: “On the merger origin of metallicity spreads in globular clusters”.
- 2018 **Invited talk**. MPIA Galaxy and Cosmology Retreat 2018, Lobbach, Germany, 14-16/05. **Title**: “The chemo-dynamical evolution of the Solar System”.

- 2017 **Invited review talk.** “The amazing life of stars”, Cefalù, Italy, 04-08/09. **Title:** “The formation and evolution of Nuclear star clusters”.
- 2014 **Invited review talk.** “Growth and evolution of the Milky Way’s nuclear star cluster and its central black hole”, Alajar, Spain, 20-28/09. **Title:** “The formation and evolution of Nuclear star clusters”.
- 2014 **Invited talk.** “Stellar N -body Dynamics”, Sexten, Italy, 08-12/09. **Title:** “The formation and evolution of Nuclear star clusters”.

INVITED SEMINARS/COLLOQUIA (20 seminars in several international institutes)

- 06/05/2021 “Merging globular clusters in an evolving galaxy”, Observatoire de Paris, FR
- 22/05/2020 “Stellar cluster mergers and star formation in galactic nuclei”, University of Zurich, CH
- 21/11/2019 “Globular cluster mergers and star formation at the Galactic Centre”, INAF Bologna, IT
- 14/11/2019 “Merging globular clusters in an evolving galaxy”, Lund Observatory, SW
- 05/03/2019 “The hidden link between globular and nuclear clusters”, Nice Observatory, FR
- 03/05/2018 “Globular cluster evolution in the Galaxy: inspirals and mergers”, Padova Uni., IT
- 03/02/2018 “Mergers of globular clusters: the origin of metallicity spreads”, Strasbourg Obs., FR
- 12/01/2017 “A primordial origin for the composition similarity between the Earth and the Moon”, University of Milano-Bicocca, IT
- 12/01/2017 “The mass assembly history of Nuclear Star Clusters”, Uni. of Milano-Bicocca, IT
- 21/10/2016 “The mass assembly history of Nuclear Star Clusters”, GEPI-Obs. de Paris, FR
- 27/04/2016 “Evolution of second population stellar disks in Globular Clusters and Nuclear Star Clusters”, INAF, Osservatorio Astronomico di Roma, IT
- 26/02/2016 “Simulating the mass assembly history of Nuclear star clusters: what we learn from the Milky Way center”, MPIA colloquium, Heidelberg, DE
- 21/01/2016 “Evolution of second-generation stars in stellar disks of globular and nuclear clusters”, Galaxy Coffee, MPIA, Heidelberg, DE
- 11/02/2015 “Dynamical evolution of dense stellar systems”, MPIA Colloquium, Heidelberg, DE
- 11/02/2015 “A primordial origin for the composition similarity between the Earth and the Moon”, Planet and Star Formation weekly seminar, MPIA, Heidelberg, DE
- 16/10/2013 “Dynamical evolution of stellar systems: Globular Clusters and Galactic Nuclei”, Technion-Israel Institute of Technology, IL
- 23/07/2012 “Dynamical evolution of stellar systems: Globular Clusters and their clumpy tidal tails”, Centre for Astronomy & Particle Theory, University of Nottingham, UK
- 22/06/2012 “Dynamical evolution of stellar systems: Globular Clusters and their clumpy tidal tails”, ITC-Harvard, Smithsonian Center for Astrophysics, US
- 21/06/2012 “Globular Clusters and Galactic Nuclei”, ITC-Harvard, CfA US
- 05/03/2012 “Globular Clusters and Galactic Nuclei”, GEPI-Observatoire de Paris, FR

CONTRIBUTED CONFERENCE TALKS (29 talks)

- 2022 Journées scientifiques "Galaxies" du PNCG 2022, Strasbourg, France, Talk: “Mass loss and multiple populations in Galactic globular clusters” (20-22/06)
- 2021 Online Workshop on the Galactic Centre and Inner Galaxy, Heidelberg, Germany, Talk: “Star formation at the Galactic Centre: coevolution of multiple young stellar discs” (10-12/02)
- 2020 Compact Objects for All, Lund Observatory, Sweden, Talk: “Supermassive and intermediate-mass black holes in nuclear star clusters” (9-11/02).
- 2019 EWASS 2019, Lyon, France. Talks: “Unveiling the build-up history of galactic nuclei: models and observations in the era of ELTs” and “The dynamical origin of metallicity spreads in globular clusters” (24-28/06).

- 2019 EWASS 2019, Lyon, France. Talk: “The dynamical origin of metallicity spreads in globular clusters” (24-28/06/2019).
- 2019 “IAU Symposium 351 and MODEST 2019: Star Clusters: from the Milky Way to the Early Universe”, Bologna, Italy. Talk: “The amazing life of a globular cluster: tidal interactions and mergers in the Galactic disc and nuclear star cluster” (27-31/05).
- 2018 “Survival of dense stellar systems in the Milky Way system”, Heidelberg, Germany. Talk: “Surviving till the end: the link between globular and nuclear star clusters” (19-23/11).
- 2018 “SFB star clusters meeting”, Heidelberg, Germany. Talk: “On the origin of multiple populations and metallicity spreads in Galactic globular clusters” (15-17/08).
- 2018 “Marcel Grossmann 14, session GW8”, Rome, Italy. Talk: “The assembly history of nuclear star clusters: black holes and pulsars” (02-07/07).
- 2018 “Marcel Grossmann 14, session BH2”, Rome, Italy. Talk: “The assembly history of nuclear star clusters: supermassive, intermediate mass and stellar black-holes” (02-07/07).
- 2017 “Piercing the Galactic darkness”, Heidelberg, Germany. Talk: “The build-up of the Milky Way's Nuclear Star Cluster” (16-19/10).
- 2017 MODEST17, Prague, Czech. Talk: “The build-up of nuclear star clusters: simulations and observations” (18-22/09).
- 2017 SF2A 2017, “Chemical and dynamical modelling of Milky Way type galaxies”, Paris, France. Talk “The mass assembly history of the Milky Way Nuclear Star Cluster” (04-07/07).
- 2017 SF2A 2017, “Models and interpretation of stellar populations”, Paris, France. Talk “Constraining the origin of multiple stellar populations in globular clusters with *N*-body simulations” (04-07/07).
- 2016 631.Wilhelm und Else Heraeus–Seminar: “Stellar aggregates over mass and spatial scales”. Talk: “Simulating the mass assembly history of Nuclear Star Clusters: the imprints of cluster inspirals” (05-09/12).
- 2016 “Star Clusters: From Infancy to Teenagehood”, Heidelberg, Germany. Talk: “Multiple Stellar Populations in GCs: Constraining their origin using *N*-body simulations” (08-12/08).
- 2016 EWASS 2016, session SS8, Athens, Greece. Talk: “Second-generation stellar disks in globular clusters” (04-08/07).
- 2016 MODEST16, “Star Clusters as Cosmic Laboratories”, Bologna, Italy. Talk: “Simulating the mass assembly history of NSCs through Globular Cluster mergers” (18-22/04).
- 2015 Harvey–prize Workshop, Technion, Israel. Talk: “The formation and evolution of NSCs” (27/04).
- 2014 IAU Symposium #312, “Star Clusters and Black Holes in Galaxies across cosmic time”, Beijing, China. Talk: “The formation and evolution of Nuclear Star Clusters” (19-25/08).
- 2014 Cefalù Meeting 2014, “The Unquiet Universe”, Cefalù, Italy. Talk: “The formation and evolution of Nuclear star clusters: the role of Intermediate Mass Black Holes” (02-07/06).
- 2014 MODEST14, “Dense stellar systems from infant to old”, Bad Honnef, Germany. Talk: “Evolution of second-generation stars in stellar disks of globular and nuclear clusters” (02-06/06).
- 2013 GC2013, “The Galactic Center Black Hole Laboratory”, Granada, Spain. Talk: “The Galactic Center: the nuclear star cluster formation and evolution” (19-21/11).
- 2013 Gravasco Workshop, “Dynamics and kinetic theory of self–gravitating systems”, Paris, France. Talk: “Evolution of second-generation stars in stellar disks of globular and nuclear clusters: ω Centauri as a test case” (04-08/11).
- 2013 Italian-Israeli Conference on High Energy Astrophysics, Akko, Israel. Talk: “Dynamics in NSCs and their relevance to tidal disruption and gravitational wave events” (13-14/10).
- 2012 Israel Physics Society Conference, Jerusalem, Israel. Talk: “Clumpy streams in a smooth dark matter halo: the case of Palomar 5” (09/12).
- 2011 Cefalù meeting 2011, Italy. Talk: “The formation of the Milky Way's NSC” (13-17/06).

- 2010 NVIDIA GPU Technology Conference, San Jose (CA), US. Talk: “Gravitational N -body Simulations: How Massive Black Holes Interact with Stellar Systems” (20-23/09).
- 2009 E4 Computing Workshop 2010, Bologna (Italy). Talk: “A high precision code to simulate N -body systems on hybrid machines: quality and performance benchmarking” (17-19/09).

SELECTED PRESS COVERAGE (among more than 50 press articles, TV and radio interviews)

This is a partial list of the press releases concerning my work. They include interviews with journals, radio and television.

1. **List of citing articles (Nature):**
<https://www.nature.com/articles/nature14333/metrics>
2. **National Geographic:** <https://tinyurl.com/3mwjyhy3>
3. **Discovery Channel (Seeker):** <https://tinyurl.com/2z42frf9>
4. **Science:** <http://www.sciencemag.org/news/2015/04/how-did-moon-really-form>
5. **Ranked #47 among the top 100 science stories of 2015** on Discovery magazine:
<https://www.discovermagazine.com/the-sciences/the-moons-violent-birth>
6. **BBC:** <http://www.bbc.com/news/science-environment-32219494>
7. **NBC:** <https://tinyurl.com/2p8hdxth>
8. **Los Angeles Times:** <https://tinyurl.com/losAngTimes>
9. **Le Huffington Post:** <https://tinyurl.com/huffingtonpostfrance>
10. **Der Spiegel:** <https://tinyurl.com/derspiegelde>
11. **El Pais:** http://elpais.com/elpais/2015/04/08/ciencia/1428495111_666688.html
12. **Le Scienze (Italian version of Scientific American):**
http://www.lescienze.it/news/2015/04/09/news/impatto_terra_formazione_luna_composizione_2559065/
13. **Il Corriere della Sera:** <https://tinyurl.com/ITcorrieredellasera>
14. **Technion press release:** <http://www.technion.ac.il/en/2015/04/the-origins-of-the-moon/>
15. **Swiss Television interview:** <https://tinyurl.com/Swiss-TV-Interview>
16. **Radio24, Giovanni Talenti interview:** <https://tinyurl.com/yjsyd82f>
17. **GEPI press release on Palomar 5 tidal tails:** <https://tinyurl.com/gepitudaltails>
18. **Contribution to book chapters on outstanding women in science and technology:**
 - <https://tinyurl.com/Agnese-Interview>
 - <https://www.donnamoderna.com/news/speciali/donne-come-noi/donne-come-noi-il-libro>

COMPUTER SKILLS

Linux, Mac OS X, Windows
C, C++, CUDA C, OpenMP, awk, Bash scripting, Fortran, Python, LaTeX, Gnuplot, Office Package, Matlab, Mathematica, Topcat

REFERENCES

Dr. Paola Di Matteo

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Dr. Nadine Neumayer

Faculty member - Galactic Nuclei Group
Leader

LANGUAGES

Italian Native Speaker
English Fluent reading, writing and speaking
German Basic knowledge
French Moderate knowledge

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E-mail: hperets@ph.technion.ac.il

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