

**Dr. Martina Mammarella, PhD**  
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### EDUCATION

- |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                    |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <b>Ph.D.</b> | Department of Mechanical and Aerospace Engineering<br>Politecnico di Torino, Torino, Italy<br>Thesis Title: A Comprehensive Modeling Framework for Integrated Mission Analysis and Design of a Reusable Electric Space Tug<br>Research focus: High-power electric space tug sizing and integrated design and validation of real-time predictive control strategies (robust and stochastic) for automated rendezvous maneuvers in elliptic orbits.<br>Advisors: Giorgio Guglieri, Nicole Viola<br>Final grade: cum laude | Nov, 1st 2015 –<br>Feb, 11th 2019  |
| <b>M.Sc.</b> | Department of Mechanical and Aerospace Engineering<br>Politecnico di Torino, Torino, Italy<br>Thesis Title: Guidance and Control Algorithms for Spatial Rendezvous and Docking Maneuvers<br>Research focus: Design and validation of guidance and control strategies for spacecraft automated rendezvous in LEO.<br>Advisors: Giorgio Guglieri, Elisa Capello<br>Final grade: 107/110                                                                                                                                   | Oct, 23rd 2012 –<br>Mar, 18th 2015 |
| <b>B.Sc.</b> | Department of Mechanical and Aerospace Engineering<br>Politecnico di Torino, Torino, Italy<br>Thesis Title: Ottimizzazione delle Prestazioni di un Endoreattore Ibrido<br>Research focus: Optimization of the performance of hybrid rocket motors for a microgravity platform.<br>Advisor: Lorenzo Casalino<br>Final grade: 107/110                                                                                                                                                                                     | Aug, 25th 2009 –<br>Oct, 17th 2012 |

### RESEARCH INTERESTS

- Aerospace engineering – Space System Control
  - Design, implementation and validation of Guidance, Navigation and Control algorithms
  - Rendezvous and Mating maneuver
  - Debris Removal and Satellite De-Tumbling maneuver
- Aerospace engineering – Unmanned Autonomous Vehicles
  - Design, implementation and validation of Guidance, Navigation and Control algorithms
  - Remote Sensing missions with fixed/rotating-wing UAV
  - Sensor data fusion for autonomous guidance
  - Experimental validation of advanced GNC algorithms on UAV autopilot
- Automation and control systems
  - Model Predictive Control – Classic, Robust, Stochastic, Nonlinear
  - Robust control algorithms
  - Randomized algorithms
  - System Identification
  - Chance-constrained set approximation

- LMI for system and control theory

### **PROFESSIONAL EXPERIENCE**

- **Graduate Research Fellow** under the supervision of Prof. Nicole Viola for ARTE project (Advanced Research Thermal passive Exchange), developed in collaboration with Argotec Srl, sponsored by ASI. Operation location: ISS inflight (Dec, 17<sup>th</sup> 2014-Mar, 16<sup>th</sup> 2015 / Apr, 16<sup>th</sup> 2015-Jul, 15<sup>th</sup>).
- **Graduate Research Fellow** under the supervision of Prof. Nicole Viola for HEAT project (Heat Exchange pAssive Technology), developed in collaboration with Argotec Srl, Alenia Aermacchi, Università degli Studi di Torino (Jul, 16<sup>th</sup> 2015-Oct, 15<sup>th</sup> 2015).
- **Graduate Research Fellow** under the supervision of Prof. Nicole Viola for the research activity “Metodologia di progetto concettuale a livello di sistema di sistemi per scenari di esplorazione spaziale per assemblaggio e mantenimento di stazione lunare tramite space tug” within the project “Application of High Power Electric Propulsion to new Mission Scenarios: Adoption and Improvements of a Multi Input/ Multi Output Space System Design Tool” (ESA RFP/3-15059/17/NL/KML/md), funded by European Space Agency (Oct, 18<sup>th</sup> 2016-Nov, 17<sup>th</sup> 2016)
- **Graduate Research Fellow** under the supervision of Prof. Giorgio Guglieri for the research activity “Implementazione di leggi di controllo per la manovra di rendezvous e docking spaziale” within the project “SAPERE”, sponsored by MIUR within the Cluster Tecnologico Nazionale Aerospazio (Feb, 1<sup>st</sup> 2017-Apr, 30<sup>th</sup> 2017)
- **WPs Responsible** under the supervision of Prof. Nicole Viola for the spacecraft design phase (WP3100, WP3150, WP3300 and WP4110) of the project “High Power Hall Effect Thruster subsystem for space transportation and exploration” (ESA Contract 4000122232) sponsored by European Space Agency under GSTP Programme, Contract 4000122232 (Nov, 2017-Oct,31<sup>st</sup> 2018).
- **WPs Responsible** under the supervision of Prof. Nicole Viola (WP2000 and WP3000) for the ESA Express Procurement EXPRO “Application of High Power Electric Propulsion to new Mission Scenarios: Adoption and Improvements of a Multi Input/ Multi Output Space System Design Tool” (ESA RFP/3-15059/17/NL/KML/md), funded by European Space Agency (Oct, 2017 -Oct,31<sup>st</sup> 2018).
- **WPs Responsible** under the supervision of Dr. Fabrizio Dabbene for the guidance, navigation and control design phase (WP3) of the project “New-TODAY - Nuove soluzioni tecniche e operative per l'uso dei droni in agricoltura 4.0 - AgriDRONES 4.0” (Prot. 2017S559BB) sponsored by Istituto Italiano di Tecnologia and Ministero dell'Istruzione, dell'Università e della Ricerca, under the PRIN 2017 Programme, Contract 4000122232 (since Nov, 16<sup>th</sup> 2019).
- **Lecture Assistant** of prof. Battipede Manuela at Politecnico di Torino for the *Space flight mechanics* class (October 2014-February 2015).
- **Lecture Assistant** of prof. Guglieri Giorgio at Politecnico di Torino for the *Flight Simulation* class (March-June 2016, March-June 2017, March-June 2018).
- **Lecture Assistant** of prof. Nicole Viola at Politecnico di Torino for the *Space exploration systems II* class (January-March 2017, November 2017-March 2018).
- **Lecture Assistant** of prof. Fabrizio Dabbene at Politecnico di Torino for the *Automatic Control* class (March-September 2021).
- **Seminar Lecturer** on “Aerospace oriented control techniques: from Classical to Stochastic Algorithms” at Politecnico di Milano for the class “Flight Dynamics” held by Prof. Giorgio Guglieri (Nov,29<sup>th</sup> 2017).
- **Seminar Lecturer** on “An Overview on Model Predictive Control for Aerospace Applications” at Università degli Studi di Padova, Dipartimento di Ingegneria Informatica (Jan, 8<sup>th</sup> 2017).

- **Research Fellow** at the Dipartimento di Scienze Agrarie, Forestali e Alimentari of Università di Torino, Turin for the project “VitiFuture”, sponsored by Polo AgriFOOD of Regione Piemonte under the supervision of Prof. Paolo Gay (Jul, 30<sup>th</sup> 2019-Nov, 15<sup>th</sup> 2019).
- **Associate Researcher** at the Institute of Electronics, Computer and Telecommunication Engineering of the National Research Council of Italy (Sep, 2<sup>nd</sup> 2019-Nov, 16<sup>th</sup> 2019).
- **PostDoc Research Fellow** at the Institute of Electronics, Computer and Telecommunication Engineering of the National Research Council of Italy for the project “New-TODAY - Nuove soluzioni tecniche e operative per l'uso dei droni in agricoltura 4.0 - AgriDRONES 4.0”, sponsored by the IIT and MIUR, under the supervision of Dr. Fabrizio Dabbene (since Nov, 16<sup>th</sup> 2019).
- **Mentor of several M.S. thesis:**
  - Electric propulsion for a cislunar space tug: preliminary sizing and investigation on mutual influences (C.A. Pissoni, April 2017).
  - How the Cislunar Station can support refueling of a high-power electric spacecraft for Moon-Mars cargo transfers (M. Lanza, July 2018).
  - How a dedicated refueling system can support a high-power electric spacecraft for Moon-Mars cargo transfers (L. Cancarini, July 2018).
  - Tube-based MPC for fixed-wing UAV maneuvers (F. Giuffrida Trampetta, December 2018).
  - Automated driving for an UGV for agriculture 4.0 (M. Beygifard, July 2020)
  - Space Drones – Design and control of UAVs for planetary exploration (F. Forino, July 2020)
  - Modelling, Control and simulation of an Unmanned Ground Vehicle for agriculture 4.0 (S. Scivoli, July 2020)
  - Development of Processor-In-the-Loop Simulators for Assessing Unmanned Aerial Vehicle Performance in Pesticide Spraying Operations on Vineyards (R. Lazzari, December 2020)
  - Resource Power Management and Allocation for High-Power Electric Satellites (M.Giorgiutti, April 2021)
  - Generazione di una traiettoria ottima via Robust Model Predictive Control per un veicolo elettrico a guida autonoma a quattro ruote sterzanti (V. Ruotolo, July 2021)
  - Position determination of a mobile robot in a precision agriculture scenario (C. Donati, October 2021)

### **NATIONAL and INTERNATIONAL COLLABORATION**

- **Thales Alenia Space Italia, Turin, Italy**
  - Mission Analysis and System Design Division – Eng. Denaro, Eng. Gargioli, Eng. Massobrio
- **ESA – European Space Research and Technology Center, Noordwijk, Netherlands**
  - Propulsion and Aerothermodynamics Division – Electric Propulsion Section
- **SITAEL SpA, Ospedaletto, Pisa, Italy**
  - Electric Propulsion Division
- **Naval Postgraduate School, Monterey, California**
  - Department of Mechanical and Aerospace Engineering – Prof. Marcello Romano research group
- **Universität Stuttgart, Stuttgart, Germany**
  - Institut für Systemtheorie und Regelungstechnik – Prof. Frank Allgöwer research group
- **New Mexico State University, Las Cruces, New Mexico, USA**
  - Aerospace Engineering Department – Prof. Hyeongjun Park research group
- **Iowa State University, Ames, Iowa, USA**
  - Mechanical and Aerospace Engineering Department (Prof. Dae Young)
- **Universidad de Sevilla, Escuela Superior de Ingenieria, Sevilla, Spain**
  - Department of Ingenieria de Sistemas y Automatica – Prof. Teodoro Alamo research group
- **University of Oxford, Oxford, UK**
  - Department of Engineering Science - Control group (Prof. Mark Cannon)

- **Penn State University, Pennsylvania, USA**
  - School of Electrical Engineering and Computer Science (Prof. Costantino Lagoa)
- **The University of Sydney, Sydney, AU**
  - Australian Centre for Field Robotics (Prof. Mohammadreza Chamanbaz)
- **Università degli Studi di Torino, IT**
  - Department of Agricultural, Forest and Food Sciences – Prof. Paolo Gay research group
- **Technische Universität Berlin, DE**
  - Department of Telecommunication Systems (Prof. Sergio Lucia)
- **Tokyo Institute of Technology, JAPAN**
  - Department of Systems and Control Engineering - Prof. Takeshi Hatanaka research group

### ABROAD ACTIVITIES

- Naval Postgraduate School – Spacecraft Robotics Laboratory, Monterey, California (Jul-Sep 2016)
- Universität Stuttgart - Institut für Systemtheorie und Regelungstechnik, Stuttgart, Germany (Dec 2016)
- ESA – European Space Research and Technology Center, Noordwijk, Netherlands (Feb-Mar 2017)
- Naval Postgraduate School – Spacecraft Robotics Laboratory, Monterey, California (Jun-Aug 2017)
- University of Sevilla – Department of Ingeniería de Sistemas y Automática, Sevilla, Spain (Feb 2020)

### PUBLICATIONS

#### Journal Articles

1. Mammarella M, Paissoni C.A., Viola N., Denaro A., Gargioli E., Massobrio F. “The Lunar Space Tug: A Sustainable Bridge between Low Earth Orbits and the Cislunar Habitat”. In: *Acta Astronautica*, vol. 138, pp. 102–117, 2017, doi.org/10.1016/j.actaastro.2017.05.034.
2. Mammarella M., Capello E., Park H., Guglieri G., Romano M. “Tube-Based Robust Model Predictive Control for Spacecraft Proximity Operations in the Presence of Persistent Disturbance”. In: *Aerospace Science and Technology*, vol. 77, pp. 585–594, 2018, doi.org/ 10.1016/j.ast.2018.04.009.
3. Mammarella M, Vernicari P.M., Paissoni C.A., Viola N. “How the Lunar Space Tug Can Support the Cislunar Station”. In: *Acta Astronautica*, vol. 154, pp. 181-194, 2019, doi.org/10.1016/j.actaastro.2018.04.032.
4. Mammarella M., Capello E., Dabbene F., Guglieri G. “Sample-Based SMPC for Tracking Control of Fixed-Wing UAV”. In: *IEEE Control Systems Letters* vol. 2, no. 4, pp. 611-616, 2018, doi.org/10.1109/LCSYS.2018.2845546.
5. Mammarella M., Lorenzen M., Capello E., Park H., Dabbene F., Guglieri G., Romano M., Allgöwer F. “An Offline-Sampling SMPC Framework with Application to Autonomous Space Maneuvers”. In: *IEEE Transactions of Control Systems Technology*, 2018, doi.org/10.1109/TCST.2018.2879938.
6. Mammarella M., Lee D.Y., Park H., Capello E., Dentis M., Guglieri G. “Attitude Control of a Small Spacecraft via Tube-Based Model Predictive Control”. In: *ALAA Journal of Spacecraft and Rockets*, 2019, doi.org/10.2514/1.A34394.
7. Mammarella M., Capello E. “Tube-based Robust MPC Processor-In-the-Loop Validation for Fixed-Wing UAVs”. In: *Journal of Intelligent & Robotic Systems*, 2020, doi.org/ 10.1007/s10846-020-01172-6.
8. Paissoni C.A., Viola N., Mammarella M., Andreussi T., Rossodivita A., Saccoccia G., “Deep Space Transportation Enhanced by 20kW-Class Hall Thrusters”. In: *Acta Astronautica*, 2020, doi.org/10.1016/j.actaastro.2020.02.012.
9. Alamo, T., Reina, D.G., Mammarella, M., Abella, A., “Covid-19: Open-Data Resources for Monitoring, Modeling, and Forecasting the Epidemic”. In: *Electronics*, 2020, doi.org/10.3390/electronics9050827.
10. Mirasierra, V., Mammarella, M., Dabbene, F. Alamo, T., “Prediction error quantification through probabilistic scaling”. In: *IEEE Control Systems Letters*, 2021, doi.org/ 10.1109/LCSYS.2021.3087361.

11. Mammarella, M., Mirasierra, V., Lorenzen, M., Dabbene, F., Alamo, T., “Chance-constrained sets approximation: A probabilistic scaling approach”. Under review on: *Automatica*.
12. Mammarella, M., Comba, L., Biglia, A., Dabbene, F., Gay, P., “Cooperation of unmanned systems for agricultural applications: A theoretical framework”. Under review on: *Biosystems Engineering*.
13. Mammarella, M., Comba, L., Biglia, A., Dabbene, F., Gay, P., “Cooperation of unmanned systems for agricultural applications: A case study in a vineyard”. Under review on: *Biosystems Engineering*.

### **Conference Proceedings**

1. Viola N, Stesina F, Camisassa M, Corpino S, Di Tana V, Facciolati L, Frosi A, Hall J, Iorizzo F, Lamberti A, Lepore F, Mammarella M, Marengo M, Muggianu A. “Thermal Exchange: a Payload for Technological Experiments On-Board the International Space Station”. In: *Proceedings of 66th International Astronautical Congress (IAC)*. 2015.
2. Viola N., Stesina F., Camisassa M., Mammarella M., Muggianu A. “Methodology for Assembly, Integration and Verification of the Avionic System of a Technological Experiment On-Board the International Space Station”. In: *Proceedings of 66th International Astronautical Congress (IAC)*. 2015.
3. Mammarella M., Capello E., Guglieri G. “A Comprehensive Analysis of Guidance and Control Algorithms for Orbital Rendezvous Maneuvers”. In: *Proceedings of AIAA SPACE 2016*. 2016, doi.org/10.2514/6.2016-5214.
4. Mammarella M., Viola N., Paissoni C.A., Gargioli E., Massobrio F., Denaro A. “A Sustainable Bridge between Low Earth Orbits and Cislunar Infrastructures: the Lunar Space Tug”. In: *Proceedings of 67th International Astronautical Congress (IAC)*. 2016.
5. Mammarella M., Paissoni C.A., Vernicari P.M., Viola N., Denaro A., Gargioli E. “How the Lunar Space Tug can Support the Cislunar Station”. In: *10th LAA Symposium on the Future of Space Exploration: Towards the Moon Village and Beyond*. 2017.
6. Mammarella M., Paissoni C.A., Vernicari P.M., Viola N. “The Lunar Space Tug in the Future Space Exploration Scenario”. In: *Proceedings of 68th International Astronautical Congress (IAC)*. 2017.
7. Mammarella M., Viola N., Paissoni C.A., Vernicari P.M., Saccoccia G. Gonzalez del Amo J. “Electric Propulsion for High-Power Deep Space Transportation System: Investigation on Mutual Influences and Preliminary Sizing”. In: *Proceedings of 68th International Astronautical Congress (IAC)*. 2017.
8. Mammarella M., Guglieri G., Viola N. “Missions, Architectures and Technologies for a Lunar Space Tug in Support of Cislunar Infrastructures”. In: *Proceedings of 68th International Astronautical Congress (IAC)*. 2017.
9. Mammarella M., Capello E., Park H., Guglieri G., Romano M. “Spacecraft Proximity Operations Via Tube-Based Robust Model Predictive Control with Additive Disturbances”. In: *Proceedings of 68th International Astronautical Congress (IAC)*. 2017.
10. Mammarella M., Capello E., Lorenzen M., Dabbene F., Allgöwer F. “A General Sampling-Based SMPC Approach to Spacecraft Proximity Operations”. In: *Proceedings of 56th IEEE Conference on Decision and Control 2017*. 2017, doi.org/ 10.1109/CDC.2017.8264326.
11. Mammarella M., Vernicari P.M., Viola N. “Design and Cost Analysis of High-Power Solar Electric Propulsion Platforms”. In: *Proceeding of Space Propulsion 2018*. 2018.
12. Mammarella M., Paissoni C.A., Fusaro R., Viola N., Andreussi T., Gregucci S., Andrenucci M., Saccoccia G. “Mission Scenarios for High-Power Electric Platforms”. In: *Proceedings of Space Propulsion 2018*. 2018.
13. Mammarella M., Capello E. “A Robust MPC-Based Autopilot for Mini UAVs”. In: *Proceedings of International Conference on Unmanned Aircraft Systems (ICUAS)*. 2018, doi.org/10.1109/ICUAS.2018.8453290.
14. Mammarella M, Capello E., Guglieri G. “Robust Model Predictive Control for Automated Rendezvous Maneuvers in Near-Earth and Moon Proximity”. In: *Proceedings of AIAA SPACE 2018*. 2018, doi.org/10.2514/6.2018-5343.
15. Mammarella M., Viola N., Gonzalez del Amo J., Saccoccia G. “Electric Propulsion, an Enabling Technology for the Deep Space Gateway”. In: *Proceedings of AIAA SPACE 2018*. 2018, doi.org/10.2514/6.2018-5345.

16. Mammarella M., Lee D.Y., Park H., Capello E., Dentis M., Guglieri G., Romano M. “Attitude Control of a Small Spacecraft for Earth Observation via Tube-based Robust Model Predictive Control”. In: *Proceedings of AIAA SPACE 2018*. 2018, doi.org/10.2514/6.2018-5401.
17. Mammarella M., Pissoni C.A., Fusaro R., Viola N., Andreussi T. “How to Sustain the Deep Space Gateway with Reusable High-Power Electric Platforms”. In: *Proceedings of AIAA SPACE 2018*. 2018, doi.org/10.2514/6.2018-5189.
18. Mammarella M., Pissoni C.A., Fusaro R., Viola N., Andreussi T., Rossodivita A. “A 20kW-class Hall Effect Thruster to Enhance Present and Future Space Missions”. In: *Proceedings of 69th International Astronautical Congress (IAC)*. 2018.
19. Pissoni C.A., Mammarella M., Fusaro R., Viola N., Andreussi T., Rossodivita A., Saccoccia G. “Deep Space transportation enhanced by 20kW-class Hall Effect Thruster”. In: *Proceedings of 69th International Astronautical Congress (IAC)*. 2018.
20. Mammarella M., Ristorto G., Capello E., Bloise N., Guglieri G., Dabbene F. “Waypoint Tracking via Tube-based Robust Model Predictive Control for Crop Monitoring with Fixed-Wing UAVs”. In: *Proceedings of IEEE International Workshop on Metrology for Agriculture and Forestry 2019*. 2019.
21. Mammarella, M., Alamo, T., Lucia, S., Dabbene, F. “A probabilistic validation approach for penalty function design in Stochastic Model Predictive Control”. In: *Proceedings of 21st IFAC World Congress*, 2020.
22. Mammarella, M., Alamo, T., Dabbene, F., Lorenzen, M. “Computationally efficient stochastic MPC: a probabilistic scaling approach”. In: *Proceedings of 4th IEEE Conference on Control Technology and Applications 2020 (CCTA)*, 2020.
23. Mammarella M., Comba L. Biglia A., Dabbene F., Gay P. “Cooperative Agricultural Operations of Aerial and Ground Unmanned Vehicles”. In: *Proceedings of IEEE International Workshop on Metrology for Agriculture and Forestry 2020*. 2020.
24. Donati, C., Mammarella M., Comba L. Biglia A., Dabbene F., Gay P. “Improving agricultural drone localization using georeferenced low-complexity maps”. Accepted as contribution for: *IEEE International Workshop on Metrology for Agriculture and Forestry 2021*. 2021.
25. Mirasierra, V., Mammarella M., Dabbene F., Alamo, T., “Prediction Error Quantification through Probabilistic Scaling”. Accepted as contribution for: *60th IEEE Conference on Decision and Control 2021*. 2021.

### **RELEVANT PROGRAMMING/SOFTWARE SKILLS**

- Programming Languages:
 

Matlab/Simulink	●●●●●
C/C++	●●●●○
Python	●●●○○
HTML	●●○○○

### **PROFESSIONAL SERVICE (as Organizer)**

- Co-Chair and Organizer of the Workshop “*State-of-the-art Applications of Model Predictive Control*” held at the 4th IEEE Conference on Control Technology and Applications (CCTA 2020)

### **PROFESSIONAL SERVICE (as Reviewer)**

Automatica, IEEE Indian Control Conference (ICC), IEEE Control System Letters, AIAA Pegasus Student Conference, Aerospace Science and Technology, IEEE American Control Conference (ACC), IEEE Conference on Decision and Control (CDC), IFAC World Congress, IEEE Conference on Control Technology and Applications (CCTA), International Journal of Robust and Nonlinear Control, Optimal Control Applications and Methods (OCAM), International Journal of Adaptive Control and Signal Processing.

## **LANGUAGES**

- Italian: mother tongue.
- English: fluent (IELTS 6.0).
- Spanish: elementary.

## **AWARDS**

- PhD Quality Award 2018: 1st place for Aerospace Engineering Doctorate, Politecnico di Torino.
- PReGio Roberto Tempo Award 2020 (Premio Ricerca Giovane CNR-IEIIT).

## **MEMBERSHIP**

- IEEE Membership (since March 2018)
- IEEE Aerospace and Electronic Systems Society Membership (since March 2018)
- IEEE Control Systems Society Membership (since March 2018)
- IEEE Women in Engineering Membership (since January 2019)
- IEEE Young Professionals (since January 2018)
- IEEE Robotics and Automation Society Membership (since October 2020)
- AIAA Student Member (January 2017-April 2018)
- AIAA Young Professional Member (since September 2021)
- Affiliated to the Società Italiana Docenti e Ricercatori in Automatica (since September 2020)
- Affiliated to the Istituto Nazionale di Alta Matematica "Francesco Severi" as member of the Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni (GNAMPA) within the section "Calcolo delle variazioni, teoria del controllo e ottimizzazione" (since January 2021)
- IEEE CSS Technical Committee on Aerospace Control (since September 2020)
- IFAC Technical Committee on Robust Control (since December 2020)
- IEEE RAS Technical Committee on Agricultural Robotics and Automation (since May 2021)

## **CITATION INFORMATION (ORCID ID: 0000-0003-3421-7614)**

- Scopus:
  - Author ID: 57191544471
  - Documents by Author: 30
  - Total Citations: 140
  - h-index: 7
- Google Scholar:
  - ID: Martina Mammarella
  - Documents by Author: 38
  - Total Citations: 221
  - h-index: 9
- WoS:
  - Author ID: I-2956-2018
  - Documents by Author: 30
  - Total Citations: 66
  - h-index: 4