

## “The Italian contribution to the ISS research and the ASI experiments for the mission Beyond”

### *Abstract:*

The International Space Station (ISS) is a unique opportunity for the worldwide research in space.

Since the first years of operations, the Italian research and industrial communities have conducted a wide variety of experiments, covering many different thematics, from human research to biology&biotechnology, from technology development and demonstration to educational activities.

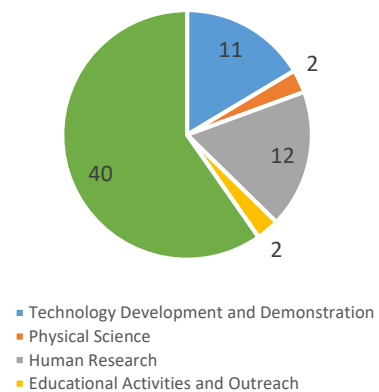
The Italian Space Agency (ASI), in the frame of its national mission of promoting and fostering the culture of space across the Country, provides access to the ISS as a laboratory in space to the Italian research community.

This is achieved in bilateral ways, through the Memorandum of Understanding dated 1997 between ASI and NASA for the use of the ISS and via the Italian participation to the ISS as a member state of the European Space Agency.

By now, ASI achieved the goal to bring 67 investigations on board the ISS, and is working on 6 new investigations for the next ESA mission of Luca Parmitano, called “BEYOND”.

These payloads, resulting from a public announcement of opportunity open to the industrial and scientific research communities, as well as for the rest of the ASI investigations are funded and coordinated by ASI.

**Number of Investigations per Discipline**



## **SYMPOSIUM N.16**

### **THE ITALIAN CONTRIBUTION TO THE ISS RESEARCH AND THE ASI EXPERIMENTS FOR THE MISSION BEYOND**

**Chaired by Eng. Giovanni Valentini**  
Agenzia Spaziale Italiana, Rome

**Greetings to Delegates of the AIDAA Congress by ESA Astronaut  
Luca Parmitano** - International Space Station , LEO orbit

**THE MISSION BEYOND**  
**Gabriele Mascetti – Head of Human Spaceflight Department-**  
**Agenzia Spaziale Italiana**

#### *Papers on the mission BEYOND*

**Paper N. 1** V. Di Tana, C. Piacenza, P. Lepore, D. Castagnolo, R. Fortezza , G. Valentini , G. Mascetti - MISSION BEYOND: THE UTISS TEAM TO SUPPORT THE ITALIAN EXPERIMENTS FOR THE INTERNATIONAL SPACE STATION

**Paper N.2** Gianni Biolo, Filippo Giorgio Di Girolamo, Nicola Fiotti, Roberta Situlin , Elisa Carrubba, Chiara Piacenza, Pietro Lepore, Raimondo Fortezza, Giovanni Valentini, Gabriele Mascetti, Sara Piccirillo - MISSION BEYOND: THE NUTRISS EXPERIMENT ON BOARD THE INTERNATIONAL SPACE STATION

**Paper N. 3** A Moleti, A. D'Amico , M.P. Orlando, G. Pennazza, M. Santonico, A. Zompanti, R. Pezzilli,, G. Zupo, R. Sisto L. Cerini, F. Sanjust, S. Iarossi, M. De Luca, F. Lo Castro, M. Deffacis, M. Trichilo, A. Crisafi, V. Di Tana, C. Piacenza, P. Lepore, D. Castagnolo, S. Piccirillo, G. Valentini, G. Mascetti – MISSION BEYOND: THE ACOUSTIC DIAGNOSTICS EXPERIMENT ON BOARD THE INTERNATIONAL SPACE STATION

**Paper N. 4** C. Casalone, E. Berrone, E. Vallino Costassa, C. Corona, F. Cardone, S. Sirigu, A. Crisafi, C. Piacenza, P. Lepore, D. Castagnolo, M. Crisconio , S. Piccirillo, G. Valentini, G. Mascetti - MISSION BEYOND: THE AMYLOID AGGREGATION EXPERIMENT ON BOARD THE INTERNATIONAL SPACE STATION

**Paper N. 5** G. Cambiè, M. Casolino, L. Marcelli - STUDY OF TERRESTRIAL AND COSMIC UV EMISSIONS FROM THE INTERNATIONAL SPACE STATION WITH THE MINI-EUSO TELESCOPE

**Paper N. 6** AM. Rizzo, S. Zava, G. Galoforo, F. Ferranti, G. Valentini, R. Fortezza, A. Norfini, M. Balsamo, A. Bardi, S. Cartocci, M. Monici - THE EDUCATIONAL EXPERIMENT XENOGRIS: GROWTH AND REGENERATION OF XENOPUS LAEVIS TADPOLES ON THE ISS

*Papers on the mission VITA*

**Paper N. 7** E. Carrubba, M. Balsamo, G. Neri ,G., Valentini, M. Crisconio, C. Sollazzo, G. Galoforo, S. Piccirillo , G. Mascetti - ITALIAN SCIENCE ON ISS: THE VITA MISSION

**Paper N. 8** M. Maccarrone, A. Gambacurta, M. Fava, N. Battista, M. Balsamo, Piccirillo, G. Valentini, G. Mascetti and M. Bari - THE SERISM PROJECT OF THE VITA MISSION OF THE ITALIAN SPACE AGENCY: FROM EARTH TO SPACE, STEP BY STEP.

**Paper N. 9** A. Roda, M. Zangheri, M. Mirasoli, M. Guardigli, F. Di Nardo, L. Anfossi, C. Baggiani, M. Benassai, E. Carrubba, G. Neri, P. Simoni - CHEMILUMINESCENCE BIOSENSOR FOR MONITORING ASTRONAUTS' HEALTH DURING SPACE MISSIONS: RESULTS FROM THE INTERNATIONAL SPACE STATION

**Paper N. 10** E.S.Di Filippo, S.Chiappalupi, S.Falone, F.Amicarelli, G.Sorci, S.Fulle – MYOGRAVITY MULTIDISCIPLINARY APPROACH TO THE ANALYSIS OF THE FUNCTIONAL ALTERATIONS INDUCED BY MICROGRAVITY IN HUMAN SATELLITE CELLS, AND STUDY OF POSSIBLE COUNTERMEASURES

**Paper N.11**

G. Baiocco, M. Giraud, L. Bocchini, S. Barbieri, I. Locantore, E. Brussolo, D. Giacosa, L. Meucci, S. Steffenino, A. Ballario, B. Barresi, R. Barresi, M. Benassai, L. Ravagnolo, L. Narici, A. Rizzo, E. Carrubba, F. Carubia, G. Neri, M. Crisconio, S. Piccirillo, G. Valentini, S. Barbero, M. Giacci, C. Lobascio, A. Ottolenghi

THE PERSEO EXPERIENCE: A WATER-FILLED GARMENT PROTOTYPE FOR PERSONAL RADIATION PROTECTION OF ASTRONAUTS SUCCESSFULLY TESTED ON BOARD THE INTERNATIONAL SPACE STATION

**Paper N.12** Lentini, E. Afelli, E. Carrubba, A. Piras, R. Sapone, M. Crisconio, G. Valentini - ARAMIS - AUGMENTED REALITY APPLICATION FOR MAINTENANCE, INVENTORY AND STOWAGE

**Paper N. 13** Giovanna Aronne, Luigi Gennaro Izzo, Leone Ermes Romano, Sara De Francesco, Veronica De Micco, Stefania De Pascale, Elisa Carrubba, Germana Galoforo, Sara Piccirillo, Giovanni Valentini - SOLUTIONS TO OVERCOME TECHNICAL CONSTRAINTS AND ACHIEVE SCIENTIFIC GOALS OF THE MULTITROP EXPERIMENT.