

Vatican
City Rome
11th-14th
September
2013

**European Low Gravity
Research Association**
International Biennial
Symposium 2013 and
General Assembly

with

**Italian Association
for Aviation and
Space Medicine**
XXVI National Meeting



Under the auspice of the

**Presidency of
the Italian
Republic**

and

**Pontifical
Council for
Culture**

Wednesday, September 11th

FOYER PAOLO VI HALL

- 14.00-16.00 **Registration**
- 16 .00-16.15 **Welcome of the AIMAS President**
Gen. Isp. CSArn **Enrico TOMAO**
- Welcome of the ELGRA President**
Prof. **Valentina SHEVTSOVA**
- 16 .15-17.45 **Panel Discussion with video-message from the ISS**
IN THE SPIRIT OF DISCOVERY: PERSPECTIVES IN SPACE RESEARCH
- Invited Participants:
 Representative of the Pontifical Council for Culture
- Enrico Saggese**, President of ASI (Italian Space Agency),
- Rainer Kuhl**, Head Physical Sciences in Microgravity, DLR (German Space Agency)
- Giovanni Bignami**, President of COSPAR (Committee on Space Research)
- Martin Zell**, Responsible for European Science Exploitation and Utilisation on the ISS (ESA)
- Paolo Nespoli**, Astronaut, ESA (European Space Agency)
- 17 .45-18.15 **Plenary Lecture**
 Monsignor **Zygmunt Zimowski**, president for the Pontifical Council for Health Care
- 18 .15-19.00 **Celebration of the 75th anniversary of the Medical Corps**
 Gen. Isp. Capo CSArn **Ottavio Sarlo**, Head of the Medical Corps
 Gen. S. A. **Pasquale Preziosa**, Head of the Air Force SM

SOCIAL PROGRAMME

- 19.00-21.00 Guided evening visit to the Vatican Museums
- 21.00-23.00 Dinner buffet at the Vatican Museums (optional)

Thursday, September 12th

WHITE HALL

08 .30-10.30

Student's Contest

Chairpersons: Medina J and Callens N

ESA EDUCATION OFFICE'S MICROGRAVITY AND HYPERGRAVITY EXPERIMENT OPPORTUNITIES: OVERVIEW AND BENEFITS FOR THE UNIVERSITY STUDENTS

Callens N, Galeone P, Kinnaird A, Setterfield T

ACTIN MEDIATED STATOLITH DISPLACEMENT IN GRAVITROPIC CHARA RHIZOIDS UNDER ALTERED GRAVITATIONAL STIMULATION: SUITABILITY OF 2D- AND 3D CLINOROTATION FOR SIMULATION OF MICROGRAVITY

Krause L, Braun M, Hemmersbach R

ALTERATIONS IN THE PROTEIN EXPRESSION PATTERN INDUCED BY DIFFERENT GRAVITATIONAL STIMULI IN ROOTS OF ARABIDOPSIS THALIANA

Schüler O, Röhrig H, Menzel D, Hemmersbach R

EFFECTS OF LIGHT STIMULATION ON PLANT CELL GROWTH AND PROLIFERATION IN SPACE: PREPARATION OF ANESA/NASA SPACE FLIGHT EXPERIMENT

Valbuena MA, Herranz R, Kiss JZ, Medina FJ

THERMO-VIBRATIONAL INSTABILITIES IN A NEAR-CRITICAL FLUID IN ZERO-G

Gandikota G, Chatain D, Amiroudine S, Hitz D, Beysens D

THE EFFECTS OF HYPERGRAVITY AND ACOUSTIC FIELDS ON RISING BUBBLES

Garcia-Sabaté A, González-Cinca R

MULTICOLOR INTERFEROMETRY FOR THE SIMULTANEOUS MEASUREMENT OF REFRACTIVE INDICES

Triller T, Köhler W

10 .30-11.00

Coffee break

Thursday

SYNOD HALL

11.00-11.30 **Physical Sciences Plenary Lecture,**
Chairperson: Kuhlmann H.

THERMOCAPILLARY LIQUID BRIDGES AND MARANGONI CONVECTION UNDER MICROGRAVITY - HISTORY, RESULTS, GENERAL ADVANTAGES AND DIFFICULTIES

Schwabe D

WHITE HALL

11.30-13.30 **Life Sciences Session - Plant Biology**
Chairperson: Kiss JZ and Mazars C

PLANT CELL RESPONSES TO MICROGRAVITY AS READJUSTMENT

Kordyum EL, Kozeko LE, Talalaev AS

PLANT CELL CYCLE IS ALTERED BY MICROGRAVITY, REAL OR SIMULATED, IN ROOT MERISTEMATIC AND IN CULTURED CELLS

Medina FJ, Manzano AI, Youssef K, Valbuena MA, Kiss JZ, van Loon JJWA, Herranz R

ANALYSIS OF GRAVTROPIC GROWTH RESPONSES OF ARABIDOPSIS THALIANA ROOTS

Ditengou F, Aubry-Hivet D, Wang H, Li X, Nziengui H, Rapp K, Oliveira O, Paponov I, Li Y, Vagt N, Hauslage J, Braun M, Dovzhenko A and Palme K

A COMPARATIVE EVOLUTIONARY APPROACH TO UNRAVEL GENE REDUNDANCY CONTRIBUTION TO UNIQUE TRANSCRIPTOMIC STATES UNDER ALTERED GRAVITY AND/OR OTHER SUBOPTIMAL ENVIRONMENTS

Herranz R, Manzano A, Medina FJ

WHAT CAN BE LEARNED FROM THE GENARA-A EXPERIMENT PERFORMED ON BOARD OF ISS BY EVALUATING MICROGRAVITY-INDUCED CHANGES IN THE PLANT MEMBRANE-PROTEOME?

Mazars C, Brière C, Grat S, Pichereaux C, Rossignol M, Pereda-Loth V, Eche B, Boucheron-Dubuisson E, Le Disquet I, Medina FJ, Graziana A, Carnero-Diaz E.

SEEDLING GROWTH—A NEW SERIES OF EXPERIMENTS ON PLANT TROPISMS AND THE CELL CYCLE ON THE ISS

Kiss JZ, Millar KDL, Edelmann RE, Medina FJ, Herranz R

PLANT DEVELOPMENT EXPERIMENT

Carnero-Diaz E, Kittang AI, Boucheron-Dubuisson E, Le-Disquet I, Herranz R, Valbuena Crespo MA, Mazars C, Grat S, Iversen TH, Mohammad AB, Fossum KR, Pereda-Loth V, Eche B, Medina FJ

CONTRIBUTE OF EXTREME-TOLERANT CYANOBACTERIA TO THE HUMAN SPACE EXPLORATION

Billi D, Baqué M, McKay CP, Rettberg P, Paul de Vera JP

YELLOW HALL

11.30-13.30 **Physical Sciences Session - Convection**

Chairperson: Ueno I

FLOW TRANSITION ON THERMOCAPILLARY CONVECTION IN HIGH PRANDTL NUMBER LIQUID BRIDGE ONBOARD ISS

Matsumoto S, Yoda S, Kawasaki H, Ueno I

ROUTE TO CHAOTIC THERMOCAPILLARY CONVECTION IN A HZ LIQUID BRIDGE REALIZED IN THE INTERNATIONAL SPACE STATION

Matsugase T, Ikebukuro K, Ueno I, Kawamura H, Nishino K, Ohnishi M, Matsumoto S

REGULAR AND CHAOTIC STREAMLINES IN HYDROTHERMAL WAVES AND IMPLICATIONS FOR THE PARTICLE TRANSPORT

Kuhlmann H, Mukin R

EFFECT OF AMBIENT GAS TEMPERATURE AND VOLUME RATIO ON PARTICLES ACCUMULATION STRUCTURE (PAS) DUE TO THERMOCAPILLARY EFFECT IN HALF ZONE LIQUID BRIDGE

Watanabe T, Melnikov D, Shevtsova V, Mialdun A, Yasnou V, Ueno I

EXPERIMENTAL INVESTIGATIONS OF DROPLET EVAPORATION IN GRAVITY AND MICROGRAVITY ENVIRONMENTS

Liu QS, Xie JC, Zhu ZQ, Chen X, Lin H

DYNAMICS OF A SESSILE DROP UNDER MICRO - AND HYPER - GRAVITY

Kabov O, Valdarno L, Zaitsev D

'GEOFLOW': CONVECTION EXPERIMENTS IN SPHERICAL SHELLS APPLYING ELECTRIC FIELDS IN MICROGRAVITY ON ISS

Futterer B, Zaussinger F, Egbers C, ESA Topical Team 'Geophysical Flow Simulation'

13.30-15.00 **Lunch**

SYNOD HALL

15.00-15.30 Physical Sciences Medalist
Chairperson: Shevtsova V

CRITICAL POINT IN SPACE: A QUEST FOR UNIVERSALITY
Beysens D

YELLOW HALL

15.30-17.00 **Life Sciences Session - Animal Models in Microgravity**
Chairpersons: Fuller CA and Horn ER

**INFLUENCE OF ALTERED GRAVITY ON PLANARIANS
HOMEOSTASIS AND REGENERATION**

Auletta G, Adell T, Salò E, van Loon JJWA, Colagè I, D'Ambrosio P

**AGE-AND GENDER-RELATED MICROGRAVITY SENSITIVITY OF
DEVELOPMENT ANDGROWTHIN XENOPUSLAEVIS**

Horn ER

**GRAVITY CHANGES DURING ANIMAL DEVELOPMENT AFFECT IGM
HEAVY CHAIN TRANSCRIPTION AND LIKELY LYMPHOPOIESIS**

Huin-Schohn C, Guéguinou N, Schenten V, Frippiat JP

**MOUSE LIVER PROTEOME RESPONSES TO LONG DURATION
EXPOSURE TO EITHER MICROGRAVITY OR HYPERGRAVITY**

Fuller CA, Fuller PM, Strollo F, Masini MA

**MOTOR ACTIVITY OF SCORPIONS IN MICROGRAVITY –
CASE REPORTS**

Sallam AED, Horn ER

**MOUSE AS MODEL TO INVESTIGATE MAMMALIAN
NEUROBEHAVIOURAL RESPONSE UNDER ALTERED GRAVITATIONAL
ENVIRONMENT**

Santucci D

SYNOD HALL

15.30-17.00 **Physical Sciences Session:
Suspensions, Emulsions, Interfaces**
Chairperson: Liggieri L

LIFT AND SHEAR-INDUCED DIFFUSION IN RED BLOOD CELL AND VESICLE SUSPENSIONS

Grandchamp X, Coupier G, Minetti C, Dubois F, Misbah C, Podgorski T

STIRRING INDUCED BY SWIMMING CELLS

Pushkin D, Shum H, Yeomans JM

INVESTIGATION OF CONCENTRATE EMULSIONS BY THE FASES EXPERIMENT CONTAINER OF THE FLUID SCIENCE LABORATORY.

Clausse D, Pezron I, Drelich A, Liggieri L

INVESTIGATION DILUTE EMULSION STUDIES IN MICROGRAVITY WITHIN THE FASES PROJECT

Schmitt M, Liggieri L, Antoni M

LIQUID TRANSPORTATION ON A MATERIAL SURFACE HAVING A SPATIAL GRADIENT IN ITS SURFACE ENERGY

Akita T, Yamanada S, Jimbo I

ADVANTAGES AND PROBLEMS FROM THERMAL CREEP-INDUCED GAS FLOWS IN DUST CLOUD MICROGRAVITY EXPERIMENTS

Vedernikov A, Balapanov D, Cecere A, Beresnev S, Schrapler R, von Borstel I, Blum J

17.00-17.30 **Coffee break**

17.30-19.00 **ELGRA General Assembly**

Friday, September 13th

SYNOD HALL

08.30-10.30 **Life Sciences Session - Long Lasting Missions: Altered Gravity and Confinement**
Chairpersons: Strollo F and Urbani L

EFFECT OF MENTAL ARITHMETIC ON CARDIOVASCULAR RESPONSES DURING PARABOLIC FLIGHTS: THE BARCELONA ZERO-G CHALLENGE
Osborne JR, Alonsopérez Lanza MV, Ferrer Desclaux D, Goswami N, Ventura González Alonso D, Moser M, Grote V, Garcia-Cuadrado G, Pérez-Poch A

BENEFITS OF OMEGA-3 POLYUNSATURATED FATTY ACID DURING LONG DURATION SPACE MISSIONS
Corsetto PA, Montorfano G, Fontani G, Migliorini S, Giardi MT, Aloisi AM and Rizzo AM

THE RISK OF KIDNEY STONE FORMATION IN SPACE: ROLE OF HYPERCALCIURIA AND AQUAPORINS
Tamma G, Di Mise A, Ranieri M, Svelto M, Pisot R, Bilancio G, Cirillo M, De Santo N, Valenti G

IN VIVO ASSESSMENT OF MUSCLE PUMP DYNAMICS UNDER ORTHOSTATIC STRESS
Leguy C, Beck L, Kümmel J, Zange J, Ganse B, Rittweger J, Blaber A

HORMONAL CHANGES DURING LONG-TERM SPACE-LIKE CONFINEMENT STRESS
Strollo F, Magni P, Monici M, Santucci D, Carucci I, Vassilieva G, Nichiporuk I, Celotti F, Masini MA

SURVIVAL IN COLD CLIMATE
Gunner Hock L

THE ABILITY OF PILOTS AND NON PILOTS TO PERCEIVE ANGULAR DISPLACEMENTS IN CENTRIFUGE AND HELICOPTER
Tribukait A

HEALTHCARE OF ESA ASTRONAUTS IN SPACE AND ON EARTH
Daman V

Friday

WHITE HALL

08.30-10.30 **Physical Sciences Session - Physical Properties of Fluids: Diffusion**
Chairperson: Legros J.C.

REVIEW OF GROUND AND MICROGRAVITY MEASUREMENTS OF DIFFUSION AND Soret COEFFICIENTS IN HYDROCARBON MULTICOMPONENT MIXTURES

Van Vaerenbergh S, Saghir Z, Galand Q, Bataller H

RESULTS OF THE DSC ON SODI EXPERIMENT: EXPERIMENTAL DETERMINATION OF TERNARY DIFFUSION COEFFICIENTS IN TERNARY LIQUID SYSTEMS

Galand Q, Van Vaerenbergh S

TOWARDS DCMIX-2 EXPERIMENT ON-BOARD ISS, GROUND PREPARATION

Mialdun A, Shevtsova V

EFFECT OF THERMOPHYSICAL PROPERTIES AND MORPHOLOGY OF THE MOLECULES IN THERMODIFFUSION COEFFICIENT OF ALKANE-ALKANE AND ALKANE-AROMATIC BINARY MIXTURES

Larrañaga M, Bou-Ali MM, Lapeira E, Madariaga JA, Santamaría C.

FICKIAN DIFFUSION IN TERNARY MIXTURES OF HYDROCARBONS

Sechenyh V, Legros JC, Shevtsova V

COMPARATIVE ANALYSES OF THREE SIMULTANEOUS ESA, NASA AND JAXA ACCELEROMETRIC SIGNALS DURING THE IVIDIL EXPERIMENT

Saez N, Ruiz X, Gavalda Jna, Shevtsova V

THE INFLUENCE OF GRAVITY LEVEL ON A Soret-DRIVEN CONVECTION OF TERNARY MIXTURE IN SQUARE CAVITY HEATED FROM ABOVE

Lyubimova TP, Zubova NA

10.30-11.00 **Coffee break**

SYNOD HALL

11.00-11.30 **Life Sciences Plenary Lecture**
Chairperson: Wuits F

BRAIN & SPACE – WHEN TWO FRONTIERS MEET
Clément G

SYNOD HALL

11.30-13.30 **Session Life Sciences: Long Lasting Missions: Risks and Countermeasures**
Chairpersons: van Loon J and Bizzarri M

MODELLING OF NEUROPHYSIOLOGICAL MECHANISM OF STRESS AND SPACE SICKNESS DUE TO ENVIRONMENTAL FACTORS DURING LONG MANNED SPACE MISSION AND COMPENSATORY ATTEMPT METHODS

Bobola JP, Gaudeau de Gerlicz C, Antoine M, Golding J, Thouvenot J

NELME: NUMERICAL EVALUATION OF LONG-TERM MICROGRAVITY EFFECTS. PARABOLIC FLIGHT VALIDATION AND LAST RESULTS

Perez-Poch A

RADIATION AND PARTICLE EFFECTS OF THE SPACE WEATHER ON IMMUNOLOGICAL SYSTEMS AND DEVELOPMENT ON PANDEMIES AND EPIDEMIES

Gaudeau C, Antoine M, Bobola JP, d'Herouville X, Borderon JC, Jarrassier W

NANOSATELLITE MICROFLUIDIC PAYLOAD WILL DETERMINE SPACEFLIGHT EFFECTS ON BACTERIAL ANTIBIOTIC RESISTANCE AND ITS GENETIC BASIS

Matin AC, Ricco AJ, Parra M, Ronzano K, Lera M, Wu D, Tan M, Spremo S, Ross S, Keyhan M, Mayberry C, Beasley C, Choi S, Benoit M, Wang J, Singh R

THE EFFECTS OF BENZOFURAN 2-CARBOXYLIC ACID DERIVATIVES AS COUNTERMEASURES FOR IMMUNESUPPRESSION

Sundaresan A, Marriott K, Mao J, Bhuiyan S, Madry-Taylor J, Denkins P

MACROVASCULAR ENDOTHELIAL CELLS AND SIMULATED MICROGRAVITY: TOWARDS A BETTER UNDERSTANDING OF ENDOTHELIAL DYSFUNCTION IN SPACE AND IN AGING

Castiglioni S, Cazzaniga A, Bradamante S, Maier JAM

EFFECT OF LUNAR DUST SIMULANT ON MORPHOLOGY AND GENE EXPRESSION IN DERMAL FIBROBLASTS

Monici M, Cialdai F, Lulli M, Capaccioli S, Marziliano N, Sundaresan A

**COENZYME Q10 IS AN INNOVATIVE COUNTERMEASURE AGAINST
RETINAL APOPTOTICCELL DEATH INDUCED BY SPACE ENVIRONMENT**

Lulli M, Witort E, Cialdai F, Di Gesualdo F, Loffredo R, Lupia A, Granucci I,
Ranaldi F, Dal Monte M, Cacchione S, Monici M, Sergio Capaccioli S

WHITE HALL

11.30-13.30 **Physical Sciences Session - Vibrations**

Chairperson: Beysens D.

**RESPONSE OF A BINARY MIXTURE TO RANDOM AND CONTROLLED
VIBRATIONS.**

Shevtsova V, Gaponenko YA, Sechenyh V, Melnikov DE, Lyubimova T, Mialdun A

FREE SURFACE DYNAMICS DRIVEN BY MULTI-AXIS VIBRATION

Porter J, Tinao I, Laverón-Simavilla A, Fernandez-Fraile J

THIN FILMS UNDER EXTERNAL VIBRATIONS

M. Bestehorn

**THE EFFECT OF VIBRATIONS ON THERMAL WAVE PROPAGATION IN A
RECTANGULAR CAVITY FILLED WITH INCOMPRESSIBLE FLUID**

Lyubimova T, Beysens D, Amiroudine S

**ON THE DETECTION OF EXTERNAL DISTURBANCES USING REDUCED
QUASI-STEADY ACCELEROMETRIC DATA**

Sáez N, Pujalte M, Gavaldà Jna, Ruiz X

**ON THE ACCURACY OF THE INTERDIFFUSION COEFFICIENTS UNDER
REAL ACCELEROMETRIC ISS CONDITIONS**

Sanchez O, Pujalte M, Ruiz X, Mercader I, Batiste O, Gavaldà Jna

WEIGHTLESS SPHERES ORBIT EACH OTHER IN A SHAKEN LIQUID

Pacheco-Martinez HA, Liao L, Hill RJA, Swift MR, Bowley RM

13.30-15.00 **Lunch**

SYNOD HALL

15.00-15.30 **Life Sciences Medalist**

Chairperson: Monici M

**THE LYMPHOCYTE STORY – AN OVERVIEW ON SEVERAL ASPECTS OF
THE IN VITRO ACTIVATION OF HUMAN LYMPHOCYTES IN SPACE**

Cogoli M

WHITE HALL

15.30-17.30 **Poster Session** *with Coffee*

17.30 **Transfer to Lago di Nemi**

21.00 **Gala Dinner**

Friday

Saturday, September 14th

YELLOW HALL

08.30-11.00 **Facilities – Simulation Systems and Models**
Chairperson: Sundaresan A and Leguy C

SIMULATION EXPERIMENTS IN GRAVITATIONAL BIOLOGY: APPLICATIONS AND LIMITATIONS

Hemmersbach R, Hauslage J, Waßer K, Hoppe S, Brungs S, Krause L,
Eiermann P, Braun M, Grimm D, Schoppmann K, Laforsch C, Ullrich O, Ivanova
K, Anken R

MICROSCOPY IN MICROGRAVITY

Jones D

LOSS OF SCIENCE AS A BENCHMARK OF HAZARD FOR CONDUCTION OF LOW GRAVITY RESEARCH EXPERIMENTS

Schiefloe M, Heskestad AW

THE ARTIFICIAL GRAVITY PLATFORM, AGP; A VERY LARGE RADIUS HUMAN CENTRIFUGE

van Loon JJWA, Wuyts FL

ENVIFUGE - PRESENTATION OF AN INNOVATIVE SHORT ARM CENTRIFUGE FOR FUTURE STUDIES ON THE EFFECTS OF ARTIFICIAL GRAVITY ON THE HUMAN BODY

Frett T, Mayrhofer M, Schwandtner J, Petrat G

ELITE S2: A FACILITY FOR QUANTITATIVE HUMAN MOVEMENT ANALYSIS ON BOARD THE ISS

Neri G, Mascetti G, Zolesi V

THE SOUNDING ROCKET MISSION MASER 12, FOUR EXPERIMENTS

Lockowandt C, Florin G, Houltz Y, Thorstenson J

UPC BARCELONA TECH PARABOLIC FLIGHT PLATFORM. OPTIMIZATION OF REDUCED GRAVITY TIME WITH DIFFERENT AEROBATIC PLANES

Perez-Poch A, González DV

FUTURE PROSPECTS IN RESEARCH UNDER SPACE CONDITIONS AT THE DROP TOWER BREMEN

Könemann T, Kaczmarczik U, Eigenbrod C, von Kampen P, Lämmerzahl C

IN ALTEC AN ITALIAN PLATFORM FOR SPACE, GRAVITATIONAL AND EXTREME ENVIRONMENT BIOMEDICINE AND PHYSIOLOGY

Ambesi-Impiombato FS, Benassai M, Torchia F

WHITE HALL

08.30-10.00

Session Physical Sciences - Physical Properties of Fluids: Two Phases and High Temperature Phenomena

Chairpersons: Gonzalez-Cinca R and Kabov O

MICROGRAVITY STUDIES OF INSTABILITY IN FRONTAL DISPLACEMENT OF VISCOUS FLUIDS FROM GAPS

Dushin VR, Nikitin VF, Smirnov NN

GRAVITY EFFECT ON PRODUCT OF ALUMINIUM COMBUSTION

Assovskiy IG, Kuznetsov GP, Kolesnikov-Svinarev VI

EFFECTS OF GRAVITY LEVEL ON AIR BUBBLES RISING IN A QUIESCENT LIQUID

Suñol F, González-Cinca R

DENSITY WAVES IN DUSTY PLASMAS UNDER MICROGRAVITY CONDITIONS AND THEIR INTERACTION WITH THE BACKGROUND PLASMA

Menzel K, Bockwoldt T, Piel A

INGASB ALLOY SEMICONDUCTOR CRYSTAL GROWTH UNDER REDUCED CONVECTION CONDITION

Inatomi Y, Sakata K, Arivanandhan M, Rajesh G, Hayakawa Y, Tanaka A, Ozawa T, Okano Y, Ishikawa T, Takayanagi M

SELF-PROPAGATING HIGH-TEMPERATURE REACTIONS FOR THE IN-SITU FABRICATION OF LUNAR AND MARTIAN PHYSICAL ASSETS

Corrias G, Licheri R, Orrù R, Cao G

WHITE HALL

10.00-11.00 **Facilities – Instruments and Diagnostics**
Chairperson: Podgorski T

THERMOLAB – AN INTERNATIONAL MICROGRAVITY LABORATORY FOR THE MEASUREMENT OF THERMOPHYSICAL PROPERTIES OF LIQUID METALLIC ALLOYS

Fecht HJ, Wunderlich RK

XRMON-GF AND XRMON-SOL: TWO MATERIAL PHYSICS EXPERIMENTS WITH IN-SITU X-RAY DIAGNOSTICS ON SOUNDING ROCKET

Houltz Y, Vaerneus A, Li J, Lockowandt C, Nguyen-Thi H, Reinhart G, Salloum G, Browne DJ, Murphy AG

RESULTS FROM RIBES PAYLOAD ON BION-M1 MISSION: FOAM2 EXPERIMENT ON SHAPE RECOVERY AND ACTUATION OF SHAPE MEMORY FOAMS AND COMPOSITES

Santo L, Quadrini F, Ganga PL, Zolesi V

DIASPACE2 EXPERIMENT ON BOARD BION1 MISSION: MONITORING OF RADIATION FIELDS IN ORBIT BY SINGLE CRYSTAL DIAMOND DOSIMETERS

De Sio A, Tozzetti L, Ganga PL, Pace E

11.00-11.30 **Coffee break**

WHITE HALL

11.30-13.15 **Agencies, Programmes and Companies**

Chairperson: Kemmerle K

MICROGRAVITY RESEARCH PLANNING OF TWO-PHASE FLUIDS SYSTEM IN CHINA

Liu QS

JAPANESE CAPABILITIES and EXPERIMENTS ON ISS

Natsuisaka M

AN INTERNATIONAL DATA E-INFRASTRUCTURE FOR THE RESEARCH IN MICROGRAVITY

Carotenuto L, Willnecker R, Hambloch P, Wever P, Barde S, Belbis O, Malapert JC

ASSESSING A MARKET FOR SUBORBITAL SCIENCE: THE EUROPEAN UNION FAST20XX PROJECT AND THE ROLE OF ORBSPACE.

Lentsch A

THE NEW COMMERCIAL SUBORBITAL VEHICLES: AN OPPORTUNITY FOR SCIENTIFIC AND MICROGRAVITY RESEARCH

Moro-Aguilar R

AN ITALIAN HUB FOR SPACE ACTIVITIES: KAYSER ITALIA

Neri G, Carrai F, Vukich M, Zolesi V

NEXT COMING EXPERIMENTS FROM KAYSER ITALIA

Vukich M, Donati A., Zolesi V

WHITE HALL

13.15-13.30 **CONCLUDING REMARKS**

Shevtsova V (ELGRA president)

Monici M and **Strollo F** (Local Organizers)

13.30-15.00 **Lunch**

Poster

STUDENTS

01ST - MOLECULAR AND CELLULAR CHARACTERIZATION OF SPACE FLIGHT EFFECTS ON ENDOTHELIAL CELL FUNCTION – THE PREPARATORY WORK

Merenda A, Balsamo M, Barravecchia I, Mariotti S, Vukich M, Maier JAM, [Angeloni D](#)

02ST - COAGULATION CHANGES INDUCED BY BED REST

[Waha JE](#), Cvirn G, Wolf S, Celebi N, Hinghofer-Szalkay H, Goswami N

03ST - ALTERED GRAVITY INDUCES CHANGES IN THE PLANT CELL CYCLE: GROWTH OF A SYNCHRONIC CELL CULTURE IN A RANDOM POSITIONING MACHINE

[Youssef K](#), van Loon JJWA, Herranz R, Medina FJ

04ST - STRUCTURAL MODIFICATIONS IN MAMMALIAN THYROIDS EXPOSED TO HYPOGRAVITY – IMPORTANCE FOR ASTRONAUTS

[Lazzarini A](#), Albi E, Cataldi S, Lazzarini R, Floridi A, Loreti E, Ferri I, Curcio F, Ambesi-Impiombato FS

05ST - MESENCHYMAL CELLS EXPRESSING FLUORESCENT ACTIN FOR LIVE CELL IMAGING OF CYTOSKELETAL ORGANIZATION AND DYNAMICS UNDER MECHANICAL STRESS

[Willems J](#), Di Valentin E, Deroanne C, Colige A, Garbacki N

06ST - EASY TO INCLUDE PLATFORM FOR ALMOST ANY EXPERIMENT IMPROVING μ g-QUALITY BY DECOUPLING AND DAMPING

[Gierse A](#), Krämer S, Daab DJ, Hessel J, Baader F, Müller BS, Wagner T, Gdalewitsch G, Pfütenreuter L, Plescher E

07ST - EXPERIMENTAL STUDIES OF GRANULAR GASES OF ELONGATED GRAINS

[Harth K](#), May K, Trittel T, Wegner S, Stannarius R

08ST - SUPPLEMENTAL MEASUREMENTS OF DIFFUSION, THERMAL DIFFUSION, AND SOROT COEFFICIENTS AND OPTICAL CONTRAST FACTORS OF THE BINARY MIXTURES OF DODECANE, ISOBUTYLBENZENE AND 1,2,3,4-TETRAHYDRONAPHTHALENE FOR THE DCMIX-1 PROJECT

[Gebhardt M](#), Köhler W

09ST - INTERACTION BETWEEN AN ACOUSTIC FIELD AND A BOILING SYSTEM

[Argelagós A](#), Suñol F, González-Cinca R

10ST - THE MECHANISM OF INSTABILITIES ON NEGATIVE SORLET EFFECT DEPENDS ON ASPECT RATIO AND RAYLEIGH NUMBER

Yonezawa M, Nishino K, Shevtsova V

11ST - BEHAVIOR OF FINITE-SIZE PARTICLE IN PERIODIC FLOWS

Watanabe T, Ueno I, Shevtsova V

12ST - PREPARATION OF A LOW GRAVITY EXPERIMENT ONBOARD THE SOUNDING ROCKET REXUS 16: CHEMICAL WAVE IN SORLET EFFECT (CWIS)

Tzevelec W

LIFE SCIENCES

13LS - ULTRASTRUCTURE AND METABOLIC ACTIVITY OF PEA ROOT MITOCHONDRIA IN SIMULATED MICROGRAVITY

Brykov V

14LS - A PROTECTIVE ROLE OF HSP90 CHAPERONES IN GAMMA-IRRADIATED ARABIDOPSIS THALIANA SEEDS

Kozeko L, Talalaiev O, Neimash V, Povarchuk V

15LS - CLINOROTATION EFFECT ON GENE EXPRESSION AND CONTENT OF CYCLIN AND AQUAPORIN PROTEINS IN PISUM SATIVUM.

Artemenko OA

16LS - CORTICAL MICROTUBULES AND PHOSPHOLIPASE D ARE INVOLVED IN ARABIDOPSIS ROOT CELL GROWTH UNDER CLINOROTATION

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17LS - IN VITRO ARABIDOPSIS THALIANA ROOT GROWTH AND ANATOMY UNDER STATIONARY CONDITION AND CLINOROTATION

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18LS - FATTY ACID CONTENT AND MICROVISCOSITY IN PEA SEEDLINGS PLASMALEMMA UNDER CLINOROTATION

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19LS - IMPACT OF GRAVITY ON RESPONSES OF CRESS LEAVES TO WHITE AND BLUE LIGHT

Rakleviciene D, Losinska R, Švegždiene D, Staneviciene R

20LS - AMYLOPLAST LOCATION IN STATOCYTES OF CRESS SEEDLINGS IN FRACTIONAL GRAVITY ENVIRONMENT

Švegždiene D, Koryzniene D, Rakleviciene D

21LS - THE NEW HARDWARE “FIXBOX” FOR MICROSCOPICAL FIXATION OF PLANT SAMPLES IN SPACE REQUIRES THE ADDITION OF FERROFLUID® WITHOUT ALTERING STRUCTURAL OR ANTIGENIC PRESERVATION

Valbuena MA, Creus E, Tomàs A, Herranz R, Medina FJ Hilbig R, Grimm D, Knie M, Shcherbakov D, Lebert M

22LS - FIBROBLASTIC CELLS EXPRESSING FLUORESCENT TUBULIN FOR LIVE CELL IMAGING OF MICROTUBULE ORGANIZATION AND DYNAMICS UNDER MECHANICAL STRESS

Willems J, Di Valentin E, Deroanne C, Colige A, Garbacki N

23LS - AQUATIC BIOREGENERATIVE LIFE SUPPORT SYSTEM OMEGAHAB MISSION: FIRST REPORT OF A ONE MONTH FLIGHT ABOARD BION M1 SATELLITE

Hilbig R, Grimm D, Knie M, Shcherbakov D, Lebert M

24LS - NANOPARTICLES BASED COUNTERMEASURES FOR TREATMENT OF MICROGRAVITY INDUCED OSTEOPOROSIS (NATO)

Rizzo AM, Mustarelli P, Rea G, Campi G, Vukich M, Visai L

25LS - HEMODYNAMIC CHANGES IN MICROGRAVITY AND ADAPTATION TO GRAVITY SYSTEM SYNDROME: THE “ BABY HEART SYNDROME (BHS)” AND EVALUATION OF NEW COUNTERMEASURES

Passarani S, Andreozzi F, Savino A, Garuti F

26LS - THE USE OF AXENIC MEDIUM AND OPTICALL CELL DEVICE FOR COLLECT EXPERIMENTAL DATA ON RPM

Scari G, Cornelli G, Broccia M

27LS - WEIGHTLESSNESS IMPACT ON WOUND HEALING

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28LS - WHETHER JSC-1A LUNAR SOIL SIMULANT HAS NEUROTOXIC FEATURES?

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29LS - C.R.O.P. – COMBINED REGENERATIVE ORGANIC-FOOD PRODUCTION: AN INTEGRATED APPROACH TO THE UTILIZATION OF YELLOW WATER AND OTHER ORGANIC WASTES

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30LS - ALTERED GRAVITY AS A TOOL FOR TISSUE ENGINEERING: IMPLICATIONS ON PROLIFERATION AND DIFFERENTIATION OF A NEURONAL MODEL

Genchi GG, Ciofani G, Cialdai F, Vignali L, Monici M, Zolesi V, Menciassi A, Mazzolai B, Mattoli V

31LS - A NEW NUMERICAL TEST FOR QUANTIFYING MICROGRAVITY-INDUCED BONE ALTERATIONS IN COSMONAUTS

Cosmi F, Mazzoleni G

32LS - FRACTAL ANALYSIS OF SHAPE CHANGES IN MURINE OSTEOBLASTS MC3T3-E1 CULTURED UNDER SIMULATED MICROGRAVITY.

Palombo A, Dinicola S, D'Anselmi F, Proietti S, Pasqualato A, Masiello MG, Coluccia P, **Cucina A**, Bizzarri M

33LS - TARDIGRADES: MULTICELLULAR ORGANISMS ABOARD THE INTERNATIONAL SPACE STATION (ISS)

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34LS - A LONG-TERM SIMULATION STUDY TO INVESTIGATE THE ADMINISTRATION TO HUMANS OF NUTRACEUTICALS AND PROBIOTICS IN A CONFINED HABITAT

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