

Vacuum Fluctuations at Nanoscale and Gravitation: theory and experiments



Report of Contributions

Contribution ID: 3

Type: **not specified**

Casimir Physics (Title TBC)

Monday, 29 April 2019 09:15 (40 minutes)

Presenter: PALASANTZAS, G.

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: 4

Type: **not specified**

Casimir and Superconductors (Title TBC)

Monday, 29 April 2019 10:00 (25 minutes)

Presenter: B. SODA

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: 5

Type: **not specified**

HTc Sperconductors (Title TBC)

Monday, 29 April 2019 11:15 (25 minutes)

Presenter: TAGLIACOZZO, A.

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: 6

Type: **not specified**

Multilayer Superconductors and Casimir Effect

Monday, 29 April 2019 11:50 (30 minutes)

Presenter: ROSA, L.

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: 7

Type: **not specified**

Zeta regularization in Casimir Effect (Title TBC)

Presenter: FERMI, D.

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: 8

Type: **not specified**

Properties of cuprate high-Tc superconducting compounds

Monday, 29 April 2019 12:30 (25 minutes)

Presenter: DE LUCA, G.

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: 9

Type: **not specified**

Zeta regularization in Casimir Effect

Monday, 29 April 2019 15:00 (20 minutes)

Presenter: FERMI, D.

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: **10**

Type: **not specified**

Kagra Status

Monday, 29 April 2019 16:10 (25 minutes)

Presenter: TOMARU, T

Session Classification: Gravitation Experiments

Contribution ID: 11

Type: **not specified**

Concluding Remarks

Session Classification: Closing Remarks

Contribution ID: 12

Type: **not specified**

Concluding Remarks

Friday, 3 May 2019 12:30 (30 minutes)

Summary

Presenter: CALLONI, E.

Session Classification: Closing Remarks

Contribution ID: 13

Type: **not specified**

Virgo Status

Monday, 29 April 2019 16:40 (25 minutes)

Presenter: ALLOCCA, A.

Session Classification: Gravitation Experiments

Contribution ID: 14

Type: **not specified**

The Archimedes Experiment

Wednesday, 1 May 2019 11:15 (25 minutes)

Archimedes is an experiment conceived to shed light on one of the most intriguing topics of the modern physics: the interaction between the gravitational field and the vacuum fluctuations. The experiment will measure the force exerted by the gravitational field on a Casimir cavity, whose vacuum energy is modulated with a superconductive transition, by using a balance as a small force detector. Archimedes is an INFN six-year project that will be installed in the SARGRAV laboratory placed in an old mine located the Sardinia Italian region. This site is characterized by a very low seismic noise so it is the ideal environment for null force experiments and for third-generation gravitational waves interferometers like ET.

Summary

Presenter: Dr PUPPO, P (INFN, Roma)

Session Classification: Underground Experiments

Contribution ID: 15

Type: **not specified**

MIGA, a gravity antenna based on large scale atom interferometry

Monday, 29 April 2019 17:55 (30 minutes)

Presenter: CANUEL, B.

Session Classification: Gravitation Experiments

Contribution ID: 16

Type: **not specified**

Dark Matter Search with Darkside

Wednesday, 1 May 2019 09:00 (30 minutes)

Presenter: FIORILLO, G.

Session Classification: Underground Experiments

Contribution ID: 17

Type: **not specified**

Dark Matter and NEWSdm Experiment

Wednesday, 1 May 2019 09:30 (30 minutes)

Presenter: DE LELLIS, G.

Session Classification: Underground Experiments

Contribution ID: **18**

Type: **not specified**

ET

Wednesday, 1 May 2019 10:00 (30 minutes)

Presenter: RICCI, F.

Session Classification: Underground Experiments

Contribution ID: 19

Type: **not specified**

The Future of Kagra (TBC)

Wednesday, 1 May 2019 10:50 (25 minutes)

Presenter: TOMARU, T

Session Classification: Underground Experiments

Contribution ID: 20

Type: **not specified**

The LAG Experiment

Monday, 29 April 2019 17:30 (25 minutes)

Presenter: DI FIORE, L.

Session Classification: Gravitation Experiments

Contribution ID: 21

Type: **not specified**

The SHiP Experiment

Wednesday, 1 May 2019 11:40 (25 minutes)

Presenter: DE CRESCENZO, A.

Session Classification: Underground Experiments

Contribution ID: 22

Type: **not specified**

Optical polarimetry for vacuum magnetic birefringence

Tuesday, 30 April 2019 09:00 (30 minutes)

Presenter: DELLA VALLE, F.

Session Classification: Experiments on Vacuum Fluctuations in QED

Contribution ID: 23

Type: **not specified**

Modification of the vacuum refractive index with intense laser pulses: the DeLLight project

Tuesday, 30 April 2019 09:30 (30 minutes)

Presenter: COUCHOT, F.

Session Classification: Experiments on Vacuum Fluctuations in QED

Contribution ID: 24

Type: **not specified**

Observation of light-by-light scattering at ATLAS

Tuesday, 30 April 2019 10:00 (30 minutes)

Presenter: SCHMIEDEN, K.

Session Classification: Experiments on Vacuum Fluctuations in QED

Contribution ID: 25

Type: **not specified**

Vacuum birefringence with x-rays

Tuesday, 30 April 2019 11:00 (30 minutes)

Presenter: KING, B.

Session Classification: Experiments on Vacuum Fluctuations in QED

Contribution ID: 26

Type: **not specified**

Cosmic laboratories to test QED vacuum birefringence

Tuesday, 30 April 2019 11:30 (30 minutes)

Presenter: TUROLLA, R.

Session Classification: Experiments on Vacuum Fluctuations in QED

Contribution ID: 27

Type: **not specified**

Dicke's varying vacuum index : a new paradigm for cosmology

Tuesday, 30 April 2019 12:00 (30 minutes)

Presenter: COUCHOT, F.

Session Classification: Experiments on Vacuum Fluctuations in QED

Contribution ID: 29

Type: **not specified**

Low-frequency seismic isolation

Presenter: MOW-LOWRY, C.

Session Classification: Underground Site Characterization

Contribution ID: **30**

Type: **not specified**

Homestake site

Thursday, 2 May 2019 08:55 (25 minutes)

Presenter: MATAS, A.

Session Classification: Underground Site Characterization

Contribution ID: **31**

Type: **not specified**

Matra site

Thursday, 2 May 2019 09:20 (25 minutes)

Presenter: VÁN, P.

Session Classification: Underground Site Characterization

Contribution ID: 32

Type: **not specified**

Polgraw site studies

Thursday, 2 May 2019 10:45 (25 minutes)

Presenter: BULIK, T.

Session Classification: Underground Site Characterization

Contribution ID: 33

Type: **not specified**

Three Border Region

Thursday, 2 May 2019 11:10 (25 minutes)

Presenter: KOLEY, S.

Session Classification: Underground Site Characterization

Contribution ID: 34

Type: **not specified**

Geological studies at Sardinia site

Presenter: CUCCURU, S.

Session Classification: Underground Site Characterization

Contribution ID: 35

Type: **not specified**

Environmental sensors network in Sos-Enattos

Presenter: DE ROSA, R.

Session Classification: Underground Site Characterization

Contribution ID: 36

Type: **not specified**

Newtonian Noise Status of the Art

Thursday, 2 May 2019 14:35 (45 minutes)

Presenter: HARMS, J.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: 37

Type: **not specified**

Newtonian Noise Cancellation

Thursday, 2 May 2019 15:20 (25 minutes)

Presenter: BADARACCO, F.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: **38**

Type: **not specified**

Newtonian Noise calculations and modeling

Thursday, 2 May 2019 15:45 (25 minutes)

Presenter: KOVACS, R.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: 39

Type: **not specified**

Squeezing Status in Virgo

Thursday, 2 May 2019 12:00 (25 minutes)

Presenter: DE LAURENTIS, M.

Session Classification: Quantum Non Demolition techniques

Contribution ID: 40

Type: **not specified**

The SIPS experiment

Presenter: NATICCHIONI, L.

Session Classification: Quantum Non Demolition techniques

Contribution ID: 41

Type: **not specified**

EPR Experiment in Virgo

Thursday, 2 May 2019 12:25 (25 minutes)

Presenter: SEQUINO, V.

Session Classification: Quantum Non Demolition techniques

Contribution ID: 42

Type: **not specified**

Geological studies at Sardinia site

Friday, 3 May 2019 09:30 (25 minutes)

Summary

Presenter: OGGIANO, G.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: 43

Type: **not specified**

Vacuum Systems in Virgo and Ideas for ET

Friday, 3 May 2019 10:20 (25 minutes)

Summary

Presenter: PASQUALETTI, A.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: 44

Type: **not specified**

High sensitivity and dynamic range Balance

Friday, 3 May 2019 11:15 (25 minutes)

Presenter: ERRICO, L.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: 45

Type: **not specified**

Underground Cryogenics Systems

Friday, 3 May 2019 11:40 (25 minutes)

Presenter: RAPAGNANI, P.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: 46

Type: **not specified**

Diffused Light in Virgo and future prospects

Friday, 3 May 2019 12:05 (25 minutes)

Presenter: CHIUMMO, A,

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: 47

Type: **not specified**

Vacuum fluctuations and gravity (TBC)

Monday, 29 April 2019 15:20 (25 minutes)

Presenter: SORGE, F.

Session Classification: Vacuum Fluctuations regularizations, gravity

Contribution ID: 48

Type: **not specified**

Vacuum fluctuations and gravity (TBC)

Tuesday, 30 April 2019 14:55 (45 minutes)

Presenter: MAGGIORE, M.

Session Classification: Vacuum Fluctuations and Gravitation: Theory

Contribution ID: 49

Type: **not specified**

Observables in vacuum fluctuations and gravity (TBC)

Presenter: LAMBIASE, G.

Session Classification: Vacuum Fluctuations and Gravitation: Theory

Contribution ID: 50

Type: **not specified**

vacuum fluctuations and wormholes (TBC)

Tuesday, 30 April 2019 15:40 (25 minutes)

Presenter: GARATTINI, R.

Session Classification: Vacuum Fluctuations and Gravitation: Theory

Contribution ID: 51

Type: **not specified**

Cosmological model and GW propagation

Tuesday, 30 April 2019 16:05 (20 minutes)

Presenter: BELGACEM, E.

Session Classification: Vacuum Fluctuations and Gravitation: Theory

Contribution ID: 52

Type: **not specified**

Casimir Effect and Entropy (TBC)

Tuesday, 30 April 2019 16:40 (45 minutes)

Presenter: INGOLT, G.

Session Classification: Vacuum Fluctuations and Gravitation: Theory

Contribution ID: 53

Type: **not specified**

Long range quantum gravity and galactic dynamics

Tuesday, 30 April 2019 17:25 (20 minutes)

Presenter: TUVERI, M.

Session Classification: Vacuum Fluctuations and Gravitation: Theory

Contribution ID: 54

Type: **not specified**

Fluctuation experiment in superconductors (TBC)

Tuesday, 30 April 2019 17:45 (20 minutes)

Presenter: TAFURI, F.

Session Classification: Vacuum Fluctuations and Gravitation: Theory

Contribution ID: 56

Type: **not specified**

The LSBB Underground Laboratory

Presenter: DE MARCILLAC, P.

Contribution ID: 57

Type: **not specified**

The LSBB Underground Laboratory

Thursday, 2 May 2019 09:45 (30 minutes)

Presenter: DE MARCILLAC, P.

Session Classification: Underground Site Characterization

Contribution ID: **60**

Type: **not specified**

Charaterization fo Virgo and Sos-Enattos site

Friday, 3 May 2019 09:55 (25 minutes)

Summary

Presenter: SACCOROTTI, G.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: **61**

Type: **not specified**

Poster Session @ Sos Enattos Mine

Thursday, 2 May 2019 18:00 (2 hours)

Session Classification: Visit to the SarGrav Laboratory and Social Dinner

Contribution ID: **62**

Type: **not specified**

Social Dinner

Thursday, 2 May 2019 20:00 (2h 30m)

Session Classification: Visit to the SarGrav Laboratory and Social Dinner

Contribution ID: 63

Type: **not specified**

Low frequency detectability of Gravitational wave at the Matra mountains

Presenter: SOMLAI, L.

Session Classification: Instrumentations in High Sensitivity Small Force Detectors

Contribution ID: **64**

Type: **not specified**

The Sips Experiment

Wednesday, 1 May 2019 12:05 (25 minutes)

Presenter: NATICCHIONI, L.

Session Classification: Underground Experiments

Contribution ID: 65

Type: **not specified**

Low frequency detectability of Gravitational wave at the Matra mountains

Thursday, 2 May 2019 11:35 (25 minutes)

Presenter: SOMLAI, L.

Session Classification: Underground Site Characterization

Contribution ID: **66**

Type: **not specified**

Low Frequency seismic isolation

Wednesday, 1 May 2019 12:30 (25 minutes)

Presenter: MOW-LOWRY, C.

Session Classification: Underground Experiments

Contribution ID: 68

Type: **Poster**

The Archimedes Experiment

Archimedes is an experiment conceived to shed light on one of the most intriguing topics of the modern physics: the interaction between the gravitational field and the vacuum fluctuations. The experiment will measure the force exerted by the gravitational field on a Casimir cavity, whose vacuum energy is modulated with a superconductive transition, by using a balance as a small force detector. Archimedes is an INFN six-year project that will be installed in the SARGRAV laboratory placed in an old mine located the Sardinia italian region. This site is characterized by a very low seismic noise so it is the ideal environment for null force experiments and for third-generation gravitational waves interferometers like ET.

Summary

Primary author: Dr MANGANO, Valentina (Univ. of Rome, Sapienza)

Co-author: ARCHIMEDES COLLABORATION

Presenter: Dr MANGANO, Valentina (Univ. of Rome, Sapienza)

Session Classification: Visit to the SarGrav Laboratory and Social Dinner