# Sixteenth Marcel Grossmann Meeting

# Tuesday, 6 July 2021

#### The Early Universe: Block 1 (09:30 - 12:30)

| -Con  | veners: Stefano Ansoldi  |                               |
|-------|--|-------------------------------|
| time  | [id] title   | presenter                     |
| 09:30 | Introduction and technical remarks   |                               |
|       | [27] A Solution of the Cosmological Constant and DE and Arrow of Time, Using<br>Model of a Nonsingular Universe from Rosen from Volume (56) Ettore Majorana<br>International Science Series, Physics, 1991 | BECKWITH, Andrew              |
| 10:05 | Questions and discussion   |                               |
| 10:10 | Technical break  |                               |
| 10:15 | [337] Helical magnetic fields lead to baryogenesis   | Mr KUSHWAHA, Ashu             |
| 10:40 | Questions and discussion   |                               |
| 10:45 | Technical break  |                               |
|       | [601] Examination of Schrodinger equation in pre planckian space-time early universe   | BECKWITH, Andrew              |
| 11:15 | Questions and discussion   |                               |
| 11:20 | Technical break  |                               |
|       | [672] General Relativistic Evolution Equations for Density Perturbations in FLRW universes and the Problem of Structure Formation  | Dr MIEDEMA, Pieter            |
| 11:50 | Questions and discussion   |                               |
| 11:55 | Technical break  |                               |
| 12:00 | [794] Entropy and irreversible processes in gravity and cosmology  | ESPINOSA-PORTALÉS,<br>Llorenç |
| 12:25 | Questions and discussion   |                               |

# Wednesday, 7 July 2021

#### The Early Universe: Block 2 (09:30 - 12:30)

#### -Conveners: Stefano Ansoldi

| Bounce of Loop Quantum Cosmology10:00Questions and discussion10:04Technical break10:05[870] A pure general relativistic non-singular bouncing origin for the Universe10:30Questions and discussion10:34Technical break10:35[720] Constraining beyond \$\Lambda\$CDM models with 21 cm intensity<br>mapping forecast observations combined with latest CMB data11:00Questions and discussion11:01Technical break11:02Questions and discussion11:03[68] Quintessential Inflation from Lorentzian Slow Roll11:30Questions and discussion11:34Technical break  | A, Gabriele<br>AU, Aurélien |
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| 11:34 Technical break  | STY, David                  |
|  |                             |
| 11:35 [844] Warm inflation and its observational constraints CORF  |                             |
|  | EA, Miguel                  |
| 12:00 Questions and discussion   |                             |
| 12:04 Technical break  |                             |
| 12:05 [256] Condensed Light, Quantum Black Holes and L-CDM Cosmology: BORS<br>Experimentally Suggested and Tested Unified Approach to Dark Matter, Dark<br>Energy, Cosmogenesis and Two-Stage Inflation  | EVICI, VICTOR               |
| 12:25 Questions and discussion   |                             |