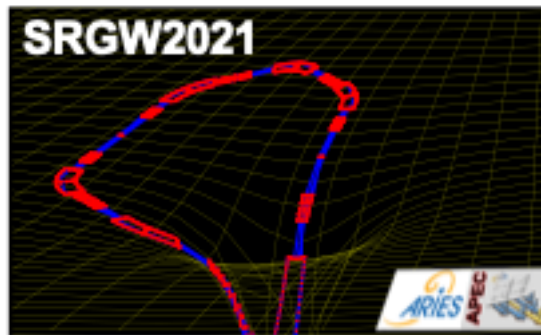


SRGW2021 - ARIES WP6

Workshop: Storage Rings and Gravitational Waves



Report of Contributions

Contribution ID: 1

Type: **not specified**

Measurement approach and sensitivities of detectors like LIGO and VIRGO

Thursday 18 February 2021 14:30 (45 minutes)

Presenter: Dr FLAMINIO, Raffaele (LAPP Annecy)

Session Classification: Measurements and sensitivity (Sense and sensibility)

Contribution ID: 2

Type: **not specified**

Storage ring sensitivity to tides & large-scale perturbations, earthquakes, noise –examples from LEP and LHC

Thursday 18 February 2021 15:15 (40 minutes)

Presenter: Dr WENNINGER, Jorg (CERN)

Session Classification: Measurements and sensitivity (Sense and sensibility)

Contribution ID: 3

Type: **not specified**

Update on Theoretical Effects of Gravitational Waves on Storage Rings

Thursday 4 March 2021 16:00 (40 minutes)

Presenter: DAGNOLO, Raffaele Tito (Univ. of California San Diego (US))

Session Classification: Proposals and Schemes

Contribution ID: 4

Type: **not specified**

Storage rings as detectors for relic gravitational-wave background?

Thursday 4 March 2021 15:15 (45 minutes)

Presenter: IVANOV, Andrei (Vienna University of Technology, Institute of Atomic and Subatomic Physics, Austria)

Session Classification: Proposals and Schemes

Contribution ID: 5

Type: **not specified**

Expected sources of gravitational waves

Tuesday 2 February 2021 15:45 (40 minutes)

Presenter: SATHYAPRAKASH, Bangalore (The Pennsylvania State University)

Session Classification: Introduction to Gravitational Waves and their effects

Contribution ID: 6

Type: **not specified**

Response of a storage-ring beam to a gravitational wave - preliminary considerations

Tuesday 2 February 2021 16:25 (20 minutes)

Presenter: Dr OIDE, Katsunobu (High Energy Accelerator Research Organization (JP))

Session Classification: Introduction to Gravitational Waves and their effects

Contribution ID: 7

Type: **not specified**

Detection of gravitational waves in circular particle accelerators - a proposal for the LHC

Thursday 4 March 2021 14:30 (45 minutes)

Presenter: RAO , Suvrat (Sternwarte & U. Hamburg)

Session Classification: Proposals and Schemes

Contribution ID: 8

Type: **not specified**

Radiofrequency cavities and gravitational wave signals?

Thursday 11 March 2021 14:30 (30 minutes)

Presenters: ELLIS, Sebastian (SLAC National Accelerator Laboratory (US)); ELLIS, Sebastian (SLAC)

Session Classification: Gravitational wave generation and detection

Contribution ID: 9

Type: **not specified**

Discussion

Thursday 11 March 2021 16:45 (20 minutes)

Session Classification: Gravitational wave generation and detection

Contribution ID: **10**

Type: **not specified**

Discussion

Thursday 4 March 2021 16:40 (20 minutes)

Session Classification: Proposals and Schemes

Contribution ID: **11**

Type: **not specified**

Discussion

Thursday 18 February 2021 15:55 (20 minutes)

Session Classification: Measurements and sensitivity (Sense and sensibility)

Contribution ID: **12**

Type: **not specified**

Discussion

Tuesday 2 February 2021 16:45 (15 minutes)

Session Classification: Introduction to Gravitational Waves and their effects

Contribution ID: 13

Type: **not specified**

Ground Vibration at SSRF Site

Thursday 18 March 2021 14:30 (30 minutes)

Presenter: Dr DENG, Rongbing (Shanghai Advanced Research Institute, Chinese Academy of Sciences)

Session Classification: Summary and Outlook

Contribution ID: 14

Type: **not specified**

A Brief History of Gravitational Waves

Tuesday 2 February 2021 15:05 (40 minutes)

Presenter: Dr CERVANTES COTA , Jorge (ININ)

Session Classification: Introduction to Gravitational Waves and their effects

Contribution ID: 15

Type: **not specified**

Using storage rings as a GW source

Thursday 11 March 2021 15:00 (45 minutes)

Presenter: CHEN, Pisin (NTU)

Session Classification: Gravitational wave generation and detection

Contribution ID: 16

Type: **not specified**

Use of atom-interferometry for possible GW detection and other gravity experiments

Thursday 11 March 2021 16:00 (45 minutes)

Presenters: ELLIS, Jonathan R. (University of London (GB)); BUCHMULLER, Oliver (Imperial College (GB))

Session Classification: Gravitational wave generation and detection

Contribution ID: 17

Type: **not specified**

Welcome

Tuesday 2 February 2021 15:00 (5 minutes)

Presenters: ZIMMERMANN, Frank (CERN); FRANCHETTI, Giuliano (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE)); ZANETTI, Marco (Università e INFN, Padova (IT))

Session Classification: Introduction to Gravitational Waves and their effects

Contribution ID: **18**Type: **not specified**

Discussion

Thursday 18 March 2021 15:15 (1h 15m)

- (1) Possibility of using an LHC access shaft to house a 100m atom interferometer targeting the 1 to 10^{-2} Hz range
- (2) K. Oide's GW detection by resonant betatron oscillations, for the 10 kHz range
- (3) S. Rao's GW detection by a change in revolution period, but "using low-energy" coasting ion beam without RF - sensitivity down to 10^{-5} Hz?
- (4) S. Ellis' suggestion for heterodyne detection using SC RF, up to $\sim 10^7$ Hz?
- (5) GW generated by the beam; orbital frequency, $\sim 10^4$ Hz for LHC, and the orbital frequency multiplied by the number of circulating bunches used - combined with high-frequency detector concept

Presenter: ELLIS, Jonathan R. (University of London (GB))**Session Classification:** Summary and Outlook

Contribution ID: **19**

Type: **not specified**

Gravitational synchrotron radiation, some history revisited, and FCC-hh

Thursday 11 March 2021 15:45 (15 minutes)

Presenter: JOWETT, John (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))

Session Classification: Gravitational wave generation and detection

Contribution ID: 20

Type: **not specified**

What Governs the Flow of Energy? Questions on Gravitational Impedance Matching

Thursday 18 March 2021 15:00 (15 minutes)

Presenter: CAMERON, Peter

Session Classification: Summary and Outlook