Physik-Combo

Report of Contributions

Contribution ID: **1**   Type: **not specified**

Welcome

Wednesday, 5 October 2022 11:00 (5 minutes)

Contribution ID: **2** Type: **not specified**

Mathematical General Relativity 1

Wednesday, 5 October 2022 11:05 (1 hour)

Presenter: GAJIC, Dejan

Contribution ID: **3**   Type: **not specified**

Q&A

Wednesday, 5 October 2022 12:05 (15 minutes)

Contribution ID: 4   Type: **not specified**

Quantum fields out-of-equilibrium and information theory 1

Wednesday, 5 October 2022 14:00 (1 hour)

Presenter: FLÖRCHINGER, Stefan

Contribution ID: **5**   Type: **not specified**

Q&A

Wednesday, 5 October 2022 15:00 (15 minutes)

Contribution ID: **6** Type: **not specified**

Fluidlike behavior in small atomic systems

Wednesday, 5 October 2022 16:00 (30 minutes)

Presenter: HEYEN, Lars

Contribution ID: **7**   Type: **not specified**

Fermi-sea excitations in chiral one-dimensional quantum channels

Wednesday, 5 October 2022 16:30 (30 minutes)

Presenter: PUSTER, Felix

Contribution ID: **8**   Type: **not specified**

Mathematical General Relativity 2

Thursday, 6 October 2022 09:00 (1 hour)

Presenter: GAJIC, Dejan

Contribution ID: **9** Type: **not specified**

Q&A

Thursday, 6 October 2022 10:00 (15 minutes)

Contribution ID: **10**   Type: **not specified**

Multi-messenger Bayesian analysis of binary neutron start mergers

Thursday, 6 October 2022 10:45 (30 minutes)

The joint detection of the GW170817 and its electromagnetic counterparts is a milestone in multi-messenger astronomy and it can provide constraints on the neutron star equation of state.
The LIGO-Virgo data of GW170817 are analyzed using different template models focusing on the implications for neutron star matter properties.
We study AT2017gfo using semi-analytical model showing that observational data favor multi-component anisotropic geometries to spherically symmetric profiles.
By joining the GW170817 and AT2017gfo information with the NICER measurements, we constrain the radius of a neutron star of 1.4 M⊠ to 12.4±0.7 km (90% confidence level).
Finally, we explore future extreme-matter constraints delivered by postmerger gravitational-waves from binary neutron star remnants with next-generation detectors.
Postmerger remnants can probe the high-density regimes of the nuclear equation of state, allowing the inference of the maximum neutron star mass with an accuracy of 12% (90% confidence level).
Moreover, these transients can be used to infer the presence of non-nucleonic matter phases through the inference of softening of the equation of state.

Presenter: BRESCHI, Matteo

Contribution ID: **11**   Type: **not specified**

GHG for Critical Phenomena simulations with bamps

Thursday, 6 October 2022 11:15 (30 minutes)

We use our adapted pseudospectral code bamps, with its new hp adaptive mesh refinement, to tune close to the barrier between gravitational collapse and dispersed fields, and study the critical phenomena that emerges near that threshold. To achieve that goal and improve our previous results, we introduce adjustments to the generalised harmonic gauge formulation of General Relativity, adapting it to the specific case of near collapse simulations. In particular, we adjust the constraint violation damping scheme, taking into account the collapse of the lapse that occurs in extreme spacetimes. We also prevent coordinate singularities by carefully choosing the gauge source function. As a result of these changes, we manage to improve our threshold estimation results. In spherical symmetry, we show critical phenomena of a massless scalar field minimally coupled to the Einstein field equations. In axisymmetry, we study Brill gravitational waves in vacuum.

Presenter: CORS, Daniela

Contribution ID: **12**   Type: **not specified**

Towards binary boson star simulations

Thursday, 6 October 2022 11:50 (30 minutes)

Presenter: ATTENEDER, Florian

Contribution ID: **13**   Type: **not specified**

Quantum fields out-of-equilibrium and information theory 2

Thursday, 6 October 2022 14:00 (1 hour)

Presenter: FLÖRCHINGER, Stefan

Contribution ID: **14** Type: **not specified**

Q&A

Thursday, 6 October 2022 15:00 (15 minutes)

Contribution ID: 15 Type: **not specified**

Magnetic catalysis in the (2+1)-dimensional Gross-Neveu model

Thursday, 6 October 2022 16:00 (30 minutes)

Presenter: MANDL, Michael

Contribution ID: **16** Type: **not specified**

Global conformal blocks on the plane from oscillator representations

Thursday, 6 October 2022 16:30 (30 minutes)

Presenter: HÖSSEL, Tobias

Contribution ID: 17 Type: **not specified**

Fellow & PI meetings

Thursday, 6 October 2022 17:00 (1 hour)

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

Quantum black holes 1

Friday, 7 October 2022 09:00 (1 hour)

Presenter: CASALS, Marc

Contribution ID: **19** Type: **not specified**

Q&A

Friday, 7 October 2022 10:00 (15 minutes)

Contribution ID: **20**   Type: **not specified**

Gravitional entanglement & quantization of spacetime

Friday, 7 October 2022 10:45 (30 minutes)

Presenter: DÖNER, Kemal

Contribution ID: **21**   Type: **not specified**

Hadamard property of the Unruh state on Kerr-de Sitter spacetime

Friday, 7 October 2022 11:15 (30 minutes)

Presenter: KLEIN, Christiane

Contribution ID: **22**   Type: **not specified**

RTG General assembly

Friday, 7 October 2022 11:50 (30 minutes)

Contribution ID: **23**   Type: **not specified**

Quantum black holes 2

Friday, 7 October 2022 14:00 (1 hour)

Presenter: CASALS, Marc

Contribution ID: **24**   Type: **not specified**

Q&A

Friday, 7 October 2022 15:00 (15 minutes)