

**From quarks to gravitational
waves: Neutron stars as a
laboratory for fundamental
physics**

Report of Contributions

Contribution ID: 1

Type: **not specified**

Neutron Star Radius Measurements, and Prospects for Future Constraints on the Dense Matter Equation of State

Monday, 5 December 2016 10:00 (1 hour)

Presenter: RUTLEDGE, Robert (McGill University)

Contribution ID: 2

Type: **not specified**

Measurements of neutron star masses and radii through X-ray spectral data

Monday, 5 December 2016 11:00 (30 minutes)

Presenter: GÜVER, Tolga (Istanbul University)

Contribution ID: 3

Type: **not specified**

Direct atmosphere model fits of X-ray bursts: New neutron star radius constraints

Monday, 5 December 2016 11:30 (30 minutes)

Presenter: NÄTTILÄ, Joonas (Tuorla Observatory & Nordita)

Contribution ID: 4

Type: **not specified**

Recent developments in the physics of neutron-star crusts

Monday, 5 December 2016 14:00 (1 hour)

Presenter: Dr CHAMEL, Nicolas (Université Libre de Bruxelles)

Contribution ID: 5

Type: **not specified**

Cold QCD and Compact Stars: EOS, Cooling and Axions

Monday, 5 December 2016 15:00 (30 minutes)

Presenter: SEDRAKIAN, Armen (Frankfurt University)

Contribution ID: 6

Type: **not specified**

TBA

Presenter: ZANE, silvia (university college London)

Contribution ID: 7

Type: **not specified**

Gravitational waves from binary neutron star systems: from the equation of state to the properties of the signal using general relativistic numerical simulations

Tuesday, 6 December 2016 10:00 (1 hour)

Presenter: DE PIETRI, Roberto (Parma University)

Contribution ID: 8

Type: **not specified**

Probing fundamental physics with universal relations for neutron stars

Wednesday, 7 December 2016 15:30 (30 minutes)

Presenter: YAGI, Kent (Princeton University)

Contribution ID: 9

Type: **not specified**

A new quark-hadron hybrid EOS for core-collapse supernovae and neutron star mergers

Tuesday, 6 December 2016 11:30 (30 minutes)

Presenter: HEMPEL, Matthias (Basel University)

Contribution ID: 10

Type: **not specified**

Recent developments of nuclear interactions within chiral EFT and applications to nuclear matter and nuclei

Tuesday, 6 December 2016 14:00 (1 hour)

Presenter: HEBELER, Kai (TU Darmstadt)

Contribution ID: 11

Type: **not specified**

Nuclear matter at zero and finite temperatures based on chiral forces

Tuesday, 6 December 2016 15:00 (30 minutes)

Presenter: CARBONE, Arianna (TU Darmstadt)

Contribution ID: 12

Type: **not specified**

Transport phenomena inside superfluid neutron stars

Tuesday, 6 December 2016 15:30 (30 minutes)

Presenter: TOLOS, Laura (University of Groningen)

Contribution ID: 13

Type: **not specified**

Nuclear EoS, Hyperons and Neutron Stars

Wednesday, 7 December 2016 10:00 (1 hour)

Presenter: WEISE, Wolfram (TU Munich)

Contribution ID: 14

Type: **not specified**

High mass neutron stars with quark cores - constraints for the EoS

Wednesday, 7 December 2016 11:00 (30 minutes)

Presenter: BLASCHKE, David (University of Wroclaw)

Contribution ID: 15

Type: **not specified**

Models of Hyper and Hybrid Stars

Wednesday, 7 December 2016 11:30 (30 minutes)

Presenter: SCHRAMM, Stefan

Contribution ID: 16

Type: **not specified**

New paths to probing the nuclear equation of state via multimessenger signals from compact binary mergers involving neutron stars

Tuesday, 6 December 2016 11:00 (30 minutes)

Presenter: PASCHALIDIS, Vasileios

Contribution ID: 17

Type: **not specified**

The physics and astrophysics of merging neutron-star binaries

Wednesday, 7 December 2016 14:00 (1 hour)

I will argue that if black holes represent one the most fascinating implications of Einstein's theory of gravity, neutron stars in binary system are arguably its richest laboratory, where gravity blends with astrophysics and particle physics. I will discuss the rapid recent progress made in modelling these systems and show how the inspiral and merger of a binary system of neutron stars is more than a strong source of gravitational waves. Indeed, while the gravitational signal can provide tight constraints on the equation of state for matter at nuclear densities, the formation of a black-hole-torus system can explain much of the phenomenology of short gamma-ray bursts, while the the ejection of matter during the merger can shed light on the chemical enrichment of the universe. The physics and astrophysics of merging neutron-star binaries

Presenter: REZZOLLA, Luciano (Goethe University Frankfurt)

Contribution ID: **18**

Type: **not specified**

Beyond general relativity

Thursday, 8 December 2016 10:00 (1 hour)

Presenter: KOKKOTAS, Konstantinos

Contribution ID: 19

Type: **not specified**

Neutron stars meet AdS/CFT

Thursday, 8 December 2016 11:00 (30 minutes)

Presenter: JOKELA, Niko

Contribution ID: 20

Type: **not specified**

Critical magnetic fields in a superconductor coupled to a superfluid

Thursday, 8 December 2016 11:30 (30 minutes)

Presenter: SCHMITT, Andreas (University of Southampton)

Contribution ID: 21

Type: **not specified**

Quark Matter in Neutron Stars

Thursday, 8 December 2016 14:00 (1 hour)

Presenter: FRAGA, Eduardo (Universidade Federal do Rio de Janeiro)

Contribution ID: 22

Type: **not specified**

The Hearty Shapes of Quark Stars

Thursday, 8 December 2016 15:30 (30 minutes)

Presenter: SCHAFFNER-BIELICH, Juergen (Frankfurt University)

Contribution ID: 23

Type: **not specified**

Global properties of rotating neutron stars with QCD equations of state

Thursday, 8 December 2016 15:00 (30 minutes)

Presenter: GORDA, Tyler (University of Helsinki)

Contribution ID: 24

Type: **not specified**

TBA

Presenter: NISSANKE, Samaya

Contribution ID: 25

Type: **not specified**

Gravitational waves from a BSM perspective

Friday, 9 December 2016 11:00 (30 minutes)

Presenter: URBANO, Alfredo Leonardo (CERN)

Contribution ID: 26

Type: **not specified**

Unveiling the compact star interior using dynamic properties

Friday, 9 December 2016 10:00 (1 hour)

Presenter: SCHWENZER, Kai (Washington University)

Contribution ID: 27

Type: **not specified**

Outlook and Future

Friday, 9 December 2016 13:00 (1 hour)

Presenter: LATTIMER, James

Contribution ID: **28**

Type: **not specified**

Discussion

Monday, 5 December 2016 16:30 (1 hour)

Contribution ID: 29

Type: **not specified**

Discussion

Tuesday, 6 December 2016 16:30 (1 hour)

Contribution ID: **30**

Type: **not specified**

Discussion

Wednesday, 7 December 2016 16:00 (1 hour)

Contribution ID: **31**

Type: **not specified**

Discussion

Thursday, 8 December 2016 16:30 (1 hour)

Contribution ID: **32**

Type: **not specified**

Discussion

Friday, 9 December 2016 14:00 (1 hour)