

SN neutrinos at the crossroads: astrophysics, oscillations, and detection



Report of Contributions

Contribution ID: 2

Type: **not specified**

Supernovae and neutrinos

Monday 13 May 2019 10:00 (40 minutes)

Presenter: Prof. BEACOM , John (Ohio State Univ.)

Session Classification: Astrophysics Session

Contribution ID: 3

Type: **not specified**

Core collapse supernova simulation at the crossroads

Monday 13 May 2019 11:20 (40 minutes)

Presenter: Prof. MEZZACAPPA, Anthony

Session Classification: Astrophysics Session

Contribution ID: 4

Type: **not specified**

Multi-messenger supernova neutrino detection

Monday 13 May 2019 14:00 (30 minutes)

Presenter: Prof. TAMBORRA, Irene (Niels Bohr Institute)

Session Classification: Astrophysics Session

Contribution ID: 5

Type: **not specified**

Global comparison of spherically symmetric SN explosions

Wednesday 15 May 2019 17:20 (30 minutes)

Presenter: Prof. O'CONNOR, Evan (Stockholm University)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 6

Type: **not specified**

Pushing spherically symmetric SN to explosion

Monday 13 May 2019 14:30 (30 minutes)

Presenter: Prof. FRÖHLICH, Carla (North Carolina State University)

Session Classification: Astrophysics Session

Contribution ID: 7

Type: **not specified**

SN gravitational waves at the crossroads: synergetic analysis with SN neutrinos

Monday 13 May 2019 15:00 (30 minutes)

Presenter: Prof. KOTAKE, Kei (Fukuoka University)

Session Classification: Astrophysics Session

Contribution ID: 8

Type: **not specified**

Neutrino bremsstrahlung rate in supernova matter revisited based on chiral EFT potential

Monday 13 May 2019 16:10 (30 minutes)

Presenter: Dr GANG, Guo (GSI)

Session Classification: Astrophysics Session

Contribution ID: 9

Type: **not specified**

Probing rotation of core-collapse supernovae with neutrino gyroscopes

Monday 13 May 2019 16:40 (20 minutes)

Presenter: Dr WALK, Laurie (Niels Bohr Institute)

Session Classification: Astrophysics Session

Contribution ID: **10**

Type: **not specified**

Core-collapse supernovae are thermonuclear explosions

Monday 13 May 2019 17:00 (20 minutes)

Presenter: Dr KUSHNIR, Doron (Weizmann Institute of Science)

Session Classification: Astrophysics Session

Contribution ID: 12

Type: **not specified**

Neutrino flavor quantum kinetics: supernovae and the early Universe

Presenter: Prof. FULLER, George (University of California, San Diego)

Session Classification: Flavor conversions

Contribution ID: 13

Type: **not specified**

Flavor evolution of dense neutrinos as an emergent phenomenon

Tuesday 14 May 2019 11:20 (40 minutes)

Presenter: Dr RAFFELT, Georg (MPI Munich)

Session Classification: Flavor conversions

Contribution ID: 14

Type: **not specified**

Effective theory of collective neutrino oscillations

Tuesday 14 May 2019 14:00 (30 minutes)

Presenter: Prof. SMIRNOV, Alexei (MPI Heidelberg)

Session Classification: Flavor conversions

Contribution ID: 15

Type: **not specified**

Algebraic approach to collective neutrino oscillations

Tuesday 14 May 2019 14:30 (30 minutes)

Presenter: Prof. BALANTEKIN, Baha (University of Wisconsin)

Session Classification: Flavor conversions

Contribution ID: 16

Type: **not specified**

Neutrino flavor evolution beyond the standard frameworks

Tuesday 14 May 2019 15:00 (30 minutes)

Presenter: Prof. VOLPE , Cristina (APC, Paris)

Session Classification: Flavor conversions

Contribution ID: 17

Type: **not specified**

NSI effects on supernova neutrino oscillations

Tuesday 14 May 2019 16:10 (30 minutes)

Presenter: Prof. DIGHE, Amol (TIFR, Mumbai)

Session Classification: Flavor conversions

Contribution ID: **18**

Type: **not specified**

Numerical toy models for fast and slow neutrino oscillations

Tuesday 14 May 2019 16:40 (30 minutes)

Presenter: Prof. SIGL, Guenter (Hamburg University)

Session Classification: Flavor conversions

Contribution ID: 19

Type: **not specified**

Neutrino evolution in dense neutrino media and self-induced flavor equilibrium

Thursday 16 May 2019 17:30 (20 minutes)

Presenter: Dr ABBAR, Sajad (APC, Paris)

Session Classification: Neutrino detection strategies

Contribution ID: 20

Type: **not specified**

Slow and fast collective oscillations: 3 flavor analysis

Tuesday 14 May 2019 17:30 (20 minutes)

Presenter: Prof. CHAKRABORTY, Sovan (Indian Institute of Technology, Guwahati)

Session Classification: Flavor conversions

Contribution ID: 21

Type: **not specified**

Stability of three flavor neutrino conversion in supernova

Tuesday 14 May 2019 17:50 (20 minutes)

Presenter: Mr DÖRING, Christian (MPI Heidelberg)

Session Classification: Flavor conversions

Contribution ID: 22

Type: **not specified**

Criterion for fast flavor conversion

Thursday 16 May 2019 18:10 (20 minutes)

Presenter: Mr STIRNER, Tobias (MPI Munich)

Session Classification: Neutrino detection strategies

Contribution ID: 23

Type: **not specified**

Neutrinos and supernovae

Wednesday 15 May 2019 09:30 (40 minutes)

Presenter: Prof. JANKA, Thomas (MPI Garching)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 24

Type: **not specified**

Nucleosynthesis: an overview

Wednesday 15 May 2019 10:10 (40 minutes)

Presenter: Prof. LANGANKE, Karlheinz (GSI Helmholtzzentrum für Schwerionenforschung GmbH)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 25

Type: **not specified**

Neutrinos and nucleosynthesis in supernova

Wednesday 15 May 2019 11:30 (40 minutes)

Presenter: Prof. MARTINEZ-PINEDO, Gabriel (GSI Darmstadt)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 26

Type: **not specified**

Neutrino nucleosynthesis with time-dependent neutrino-emission spectra

Wednesday 15 May 2019 13:40 (20 minutes)

Presenter: Dr SIEVERDING, Andre (University of Minnesota)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 27

Type: **not specified**

Effect of opacities on neutrino signal

Wednesday 15 May 2019 14:00 (30 minutes)

Presenter: Prof. FISCHER, Tobias (Wraclow University)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 28

Type: **not specified**

Colloquium: Chasing Neutrinos Around the World: A Personal History

Wednesday 15 May 2019 15:00 (1 hour)

ABSTRACT: Come hear a dramatic and entertaining account of the first half century of experimental neutrino science. Through rare photos, insider stories, and other primary source material, travel from Hanford and Savannah River in the US to South Africa, on to India, back to the US, over to Japan, and finally off to Sweden - twice! Hear about the soaring triumphs, crushing setbacks, and international rivalries which have helped define the last six decades in this challenging field, as well as what the near future has in store. This colorful lecture is based almost entirely on the speaker's first hand experiences as well as his interviews with other eyewitnesses to physics history.

Presenter: Prof. VAGINS, Mark (IMPU Tokyo)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 29

Type: **not specified**

Progenitors of core-collapse SNe: neutrinos and other WISPs

Wednesday 15 May 2019 16:50 (30 minutes)

Presenter: Prof. STRANIERO, Oscar (Italian National Institute of Astrophysics)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 30

Type: **not specified**

Supernovae & axions

Wednesday 15 May 2019 16:20 (30 minutes)

Presenter: Prof. GIANNOTTI, Maurizio (Barry Univ., Miami)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: **31**

Type: **not specified**

Welcome talk

Monday 13 May 2019 09:40 (20 minutes)

Presenter: Prof. WAMBACH, Jochen (Director of ECT*)

Session Classification: Welcome

Contribution ID: 32

Type: **not specified**

Multi-messenger SN neutrino detection

Presenter: Prof. HORIUCHI, Shunsaku (Virginia Tech)

Session Classification: Neutrino detection strategies

Contribution ID: 33

Type: **not specified**

Supernova neutrino detection

Thursday 16 May 2019 10:00 (40 minutes)

Presenter: Prof. SCHOLBERG, Kate (Duke Univ.)

Session Classification: Neutrino detection strategies

Contribution ID: 34

Type: **not specified**

Determining supernova unknowns with the diffuse supernova neutrino background

Thursday 16 May 2019 11:20 (30 minutes)

Presenter: Dr SULIGA, Anna (Niels Bohr Institute, University of Copenhagen)

Session Classification: Neutrino detection strategies

Contribution ID: 35

Type: **not specified**

Detecting the DSNB in water-based liquid scintillators

Thursday 16 May 2019 13:00 (30 minutes)

Presenter: Prof. WURM, Michael (JGU Mainz)

Session Classification: Neutrino detection strategies

Contribution ID: 36

Type: **not specified**

Supernovae, IceCube, and new ideas

Thursday 16 May 2019 13:30 (30 minutes)

Presenter: Prof. KÖPKE, Lutz (Johannes Gutenberg University Mainz)

Session Classification: Neutrino detection strategies

Contribution ID: 37

Type: **not specified**

SN neutrinos at JUNO

Thursday 16 May 2019 14:00 (30 minutes)

Presenter: Prof. ZHOU, Shun (Institute of High Energy Physics, Chinese Academy of Sciences)

Session Classification: Neutrino detection strategies

Contribution ID: **38**

Type: **not specified**

Full-flavor reconstruction of supernova neutrino energy spectra

Thursday 16 May 2019 15:10 (20 minutes)

Presenter: Dr LI, Huiling (Institute of High Energy Physics)

Session Classification: Neutrino detection strategies

Contribution ID: 39

Type: **not specified**

The JUNO detector and its potential in detecting CCSN neutrinos

Thursday 16 May 2019 15:30 (20 minutes)

Presenter: Ms MARTELLINI, Cristina (University Roma 3)

Session Classification: Neutrino detection strategies

Contribution ID: 40

Type: **not specified**

HALO-1kT: a lead-based supernova detector

Thursday 16 May 2019 15:50 (20 minutes)

Presenter: Dr GALLO-ROSSO, Andrea (Laurentian University)

Session Classification: Neutrino detection strategies

Contribution ID: 42

Type: **not specified**

Supernova neutrino detection with KM3NeT

Monday 13 May 2019 17:20 (20 minutes)

Presenter: Dr KULIKOVSKIY, Vladimir (INFN Sezione Di Genova)

Session Classification: Astrophysics Session

Contribution ID: 43

Type: **not specified**

Sensitivity of SNO+ to supernova neutrinos

Thursday 16 May 2019 16:50 (20 minutes)

Presenter: Dr STRINGER, Mark (Queen Mary University Of London)

Session Classification: Neutrino detection strategies

Contribution ID: 44

Type: **not specified**

Development of the comprehensive analysis tools for the supernova neutrino detectors

Thursday 16 May 2019 16:30 (20 minutes)

Presenter: Dr OREKHOV, Vsevolod (Johannes Gutenberg-Universität Mainz)

Session Classification: Neutrino detection strategies

Contribution ID: 45

Type: **not specified**

Time of flight and SNe progenitor effects on the neutrino halo

Presenter: Dr CHERRY, John (University of South Dakota)

Session Classification: Flavor conversions

Contribution ID: 46

Type: **not specified**

Moments, fast conversions and SN simulations

Thursday 16 May 2019 17:50 (20 minutes)

Presenter: Dr SEN, Manibrata (Northwestern University)

Session Classification: Neutrino detection strategies

Contribution ID: 47

Type: **not specified**

Fast-flavor conversions & SN simulations

Presenter: Dr CAPOZZI, Francesco (MPI Munich)

Session Classification: Flavor conversions

Contribution ID: 48

Type: **not specified**

Crossings between the angular distributions of neutrinos in the supernova core

Wednesday 15 May 2019 18:30 (20 minutes)

Presenter: Dr SHALGAR, Shashank (Niels Bohr Institute)

Session Classification: Nucleosynthesis and new particle emission

Contribution ID: 49

Type: **not specified**

The effect of neutrino oscillations on core-collapse supernova explosion

Wednesday 15 May 2019 18:10 (20 minutes)

Presenter: Dr STAPLEFORD, Charles (North Carolina State University)

Session Classification: Nucleosynthesis and new particle emission