SNEWS Meeting @ Neutrino2020

Report of Contributions

https://indico.cern.ch/e/SNEWS-Nu2020

Contribution ID: **2** Type: **Poster**

Analytic Model for Supernova Neutrinos

We report the status of upgrading the analytic supernova model of Mueller et al. (2016) with a focus on neutrino emission. Our simple model is calibrated to existing numerical supernova simulations and will include the dependence on the mass density property of the progenitor to yield neutrino predictions within seconds.

Primary authors: LAM, Tommy (Virginia Tech); HORIUCHI, Shunsaku (Virginia Tech); Prof. TAKIWAKI, Tomoya (National Astronomical Observatory of Japan); KNELLER, James (NC State University)

Presenter: LAM, Tommy (Virginia Tech)

Session Classification: Signal Prediction - Modeling

Track Classification: Signal Prediction - Modeling

Contribution ID: **3** Type: **Invited Talk**

Manibrata Sen

Friday, 19 June 2020 07:00 (20 minutes)

Presenter: SEN, Manibrata

Session Classification: Signal Prediction - Modeling

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

Laurie Walk

Friday, 19 June 2020 07:20 (20 minutes)

Presenter: Dr LAURIE, Walk

Session Classification: Signal Prediction - Modeling

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

Tommy Lam

Friday, 19 June 2020 07:40 (20 minutes)

Presenter: LAM, Tommy (Virginia Tech)

Session Classification: Signal Prediction - Modeling

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

Introduction to session

Saturday, 20 June 2020 07:00 (5 minutes)

Presenter: TSENG, Jeffrey (University of Oxford (GB))

Session Classification: Alert Formation - Triangulation and Pointing

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

Pointing based on anisotropic interactions

Saturday, 20 June 2020 07:05 (10 minutes)

Presenter: SCHOLBERG, Kate (Duke University)

Session Classification: Alert Formation - Triangulation and Pointing

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

Pointing confidence area estimation

Saturday, 20 June 2020 07:15 (15 minutes)

Presenters: Dr KULIKOVSKIY, Vladimir (INFN Genova); COLOMER, marta (km3net)

Session Classification: Alert Formation - Triangulation and Pointing

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

Time measurements from individual experiments

Saturday, 20 June 2020 07:30 (10 minutes)

Presenter: VIRTUE, Clarence (Laurentian University)

Session Classification: Alert Formation - Triangulation and Pointing

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

Pointing with shape information

Saturday, 20 June 2020 07:40 (10 minutes)

Presenter: WANG, Jia-Shian (University of Hong Kong (HK))

Session Classification: Alert Formation - Triangulation and Pointing

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

Systematic uncertainties discussion

Saturday, 20 June 2020 07:50 (15 minutes)

Session Classification: Alert Formation - Triangulation and Pointing

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

Discussion on Next Steps

Saturday, 20 June 2020 08:05 (10 minutes)

Presenter: SCHOLBERG, Kate (Duke University)

Session Classification: Alert Formation - Triangulation and Pointing

Contribution ID: **15** Type: **Contributed Talk**

Pointing with presupernova neutrinos

Friday, 19 June 2020 08:15 (20 minutes)

Presenter: LUNARDINI, Cecilia (Arizona State University)

Session Classification: Signal Prediction - Pre-supernova

Contribution ID: **16** Type: **Contributed Talk**

Shape analysis and combination of presupernova signals

Friday, 19 June 2020 08:35 (20 minutes)

Presenter: SHESHUKOV, Andrey (JINR)

Session Classification: Signal Prediction - Pre-supernova

Contribution ID: **17** Type: **Contributed Talk**

Pre-supernova neutrino alert with SNO+

Friday, 19 June 2020 08:55 (10 minutes)

Presenter: RUMLESKIE, Janet (Laurentian University)

Session Classification: Signal Prediction - Pre-supernova

Contribution ID: **19** Type: **Contributed Talk**

Scimma and Hopskotch

Friday, 19 June 2020 10:40 (20 minutes)

Primary authors: DEPOIAN, Amanda (Purdue University); XU, Skylar(Yiyang) (Rice Univeristy)

Presenters: DEPOIAN, Amanda (Purdue University); XU, Skylar(Yiyang) (Rice Univeristy)

Session Classification: Alert Formation - Implementation

Contribution ID: **20** Type: **Contributed Talk**

Signifcance-based Alerts

Friday, 19 June 2020 11:00 (20 minutes)

Primary author: SHESHUKOV, Andrey (JINR)

Presenter: SHESHUKOV, Andrey (JINR)

Session Classification: Alert Formation - Implementation

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

Discussion

Open discussion (everyone).

Primary author: HABIG, Alec Thomas (University of Minnesota (US))

Presenter: HABIG, Alec Thomas (University of Minnesota (US))

Session Classification: Alert Formation - Implementation

Contribution ID: **22** Type: **Contributed Talk**

Sensitivity of KM3Net to CCSNe: Online and Offline Performance

Friday, 19 June 2020 09:36 (18 minutes)

Presenters: LINCETTO, Massimiliano; COLOMER, marta (km3net)

Session Classification: Signal Prediction - Detector Response

Contribution ID: **23** Type: **Contributed Talk**

Detector response of KM3Net, offline implementation

Presenters: LINCETTO, Massimiliano; COLOMER, marta (km3net)

Session Classification: Signal Prediction - Detector Response

Contribution ID: **24** Type: **Contributed Talk**

Sensitivity of RES-NOVA to supernova neutrinos

Friday, 19 June 2020 09:54 (18 minutes)

Presenter: PATTAVINA, Luca Maria (INFN - National Institute for Nuclear Physics)

Session Classification: Signal Prediction - Detector Response

Contribution ID: **25** Type: **Contributed Talk**

Sensitivity of LZ to supernova neutrinos

Friday, 19 June 2020 10:12 (18 minutes)

Presenter: MCCARTHY, Elise (University of Rochester)

Session Classification: Signal Prediction - Detector Response

Contribution ID: **28** Type: **Poster**

Preparing to Observe the Next Galactic Supernova with IceCube

The next Galactic supernova will be a historic opportunity for multi-messenger astronomy. A core collapse will produce a neutrino burst visible up to half a day before electromagnetic radiation from the explosion, providing an early warning for optical follow-up and valuable insight about the proto-neutron star. Since local supernovae are exceedingly rare, it is critical that neutrino detectors provide prompt alerts after the arrival of a burst. The IceCube Neutrino Observatory is currently the world's largest neutrino detector and is operating with >99% uptime, making it a crucial component of the worldwide network of detectors known as the SuperNova Early Warning System (SNEWS). We will discuss the sensitivity of IceCube to supernovae near the Milky Way and describe the "data challenges" used to ensure the readiness of the detector. We will also discuss the coordination of IceCube alerts with other neutrino detectors in SNEWS.

Primary author: GRISWOLD, Spencer (University of Rochester)

Presenter: GRISWOLD, Spencer (University of Rochester)

Session Classification: Alert Formation - Fire Drills

Track Classification: Alert Formation - Fire Drills

Contribution ID: **29** Type: **not specified**

Overview

Friday, 19 June 2020 09:30 (6 minutes)

Presenter: BENZVI, Segev (University of Rochester)

Session Classification: Signal Prediction - Detector Response

Contribution ID: **30** Type: **Contributed Talk**

Intro to fire drill overall strategy

Saturday, 20 June 2020 08:30 (10 minutes)

Presenter: O'SULLIVAN, Erin (Stockholm University)

Session Classification: Alert Formation - Fire Drills

Contribution ID: **31** Type: **Contributed Talk**

Brainstorming - supernova modelling

Saturday, 20 June 2020 08:40 (5 minutes)

Presenters: O'CONNOR, Evan; KNELLER, James (NC State University)

Session Classification: Alert Formation - Fire Drills

Contribution ID: **32** Type: **Contributed Talk**

Brainstorming - Detector response

Saturday, 20 June 2020 08:45 (5 minutes)

Presenter: BENZVI, Segev (University of Rochester)

Session Classification: Alert Formation - Fire Drills

Contribution ID: **33** Type: **not specified**

Brainstorming - Pre-supernova

Saturday, 20 June 2020 08:50 (5 minutes)

Presenters: SHESHUKOV, Andrey (JINR); LUNARDINI, Cecilia (Arizona State University)

Session Classification: Alert Formation - Fire Drills

Contribution ID: **34** Type: **Contributed Talk**

Brainstorming - implementation

Saturday, 20 June 2020 08:55 (5 minutes)

Presenter: HABIG, Alec Thomas (University of Minnesota (US))

Session Classification: Alert Formation - Fire Drills

Contribution ID: **35** Type: **not specified**

Brainstorming - triangulation

Saturday, 20 June 2020 09:00 (5 minutes)

Presenters: TSENG, Jeffrey (University of Oxford (GB)); SCHOLBERG, Kate (Duke University)

Session Classification: Alert Formation - Fire Drills

Contribution ID: **36** Type: **not specified**

Brainstorming - Multimessenger

Saturday, 20 June 2020 09:05 (5 minutes)

Presenter: MILISAVLJEVIC, Dan (Purdue University)

Session Classification: Alert Formation - Fire Drills

Contribution ID: **37** Type: **not specified**

Brainstorming - Outreach

Saturday, 20 June 2020 09:10 (5 minutes)

Presenter: VASEL, Justin (Indiana University)

Session Classification: Alert Formation - Fire Drills

Contribution ID: **38** Type: **not specified**

Discussion

Saturday, 20 June 2020 09:15 (15 minutes)

Session Classification: Alert Formation - Fire Drills