TMEX 2018 WCP: European Workshop on Water Cherenkov Precision Detectors for Neutrino and Nucleon Decay Physics

Report of Contributions

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

Event Reconstruction Methods in IceCube

Wednesday, 19 September 2018 15:40 (25)

Presenter(s) : HUENNEFELD, Mirco

Session Classification : Detection techniques, particle reconstruction

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

ANNIE Phase II

Thursday, 20 September 2018 09:45 (25)

Presenter(s) : DRAKOPOULOU, Evangelia

Session Classification : Current WC running experiments

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

Welcome

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

Welcome

Wednesday, 19 September 2018 09:00 (15)

Session Classification : Introductory talks

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

History of Water Cherenkov detectors and measurements

Wednesday, 19 September 2018 09:15 (45)

Presenter(s) : WARK, David

Session Classification : Introductory talks

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

Super-Kamiokande + SK-Gd

Wednesday, 19 September 2018 10:25 (30)

Presenter(s) : TAKEUCHI, Yasuo

Session Classification : Current WC running experiments

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

SNO

Wednesday, 19 September 2018 10:55 (30)

Presenter(s) : BARROS, Nuno

Session Classification : Current WC running experiments

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

Hyper-Kamiokande

Wednesday, 19 September 2018 11:25 (25)

Presenter(s) : SEO, Sunny

Session Classification : Current WC running experiments

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

IceCube/IceCube-Gen2/DeepCore

Wednesday, 19 September 2018 11:50 (30)

Presenter(s) : YANEZ GARZA, Juan Pablo

Session Classification : Current WC running experiments

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

Theory landscape of neutrino interactions

Wednesday, 19 September 2018 14:15 (35)

Presenter(s) : SANCHEZ, Federico

Session Classification : Neutrino interactions

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

Neutrino generators: NuWro, NEUT, GENIE

Wednesday, 19 September 2018 14:50 (25)

Presenter(s) : JUSZCZAK, Cezary

Session Classification : Neutrino interactions

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

SK reconstruction: vertex, ring counting, particle ID and momentum

Wednesday, 19 September 2018 16:05 (20)

Presenter(s) : MIURA, Makoto

Session Classification : Detection techniques, particle reconstruction

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

Water Cherenkov event reconstruction with FiTQun

Wednesday, 19 September 2018 16:25 (30)

Presenter(s) : VILELA, Cristovao

Session Classification : Detection techniques, particle reconstruction

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

Tau neutrino reconstruction at Super-K

Wednesday, 19 September 2018 16:55 (25)

Presenter(s) : LI, Zepeng

Session Classification : Detection techniques, particle reconstruction

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

Reducing interaction model uncertainties in long baseline oscillation measurements with the J-PARC E61 experiment

Thursday, 20 September 2018 09:20 (25)

Presenter(s) : VILELA, Cristovao

Session Classification : Current WC running experiments

Contribution ID : **25** Type : **not specified**

Watchman

Presenter(s) : VAGINS, Mark

Session Classification : Current WC running experiments

Contribution ID : **26** Type : **not specified**

Large Aperture Photodetectors for Water Cherenkov Detectors

Thursday, 20 September 2018 10:10 (35)

Presenter(s) : NISHIMURA, Yasuhiro

Session Classification : Photosensors and front-end electronics

Contribution ID : **27** Type : **not specified**

Multi-PMT units for the Water Cherenkov detectors, the case of KM3Net and its evolution for E61 and Hyper-Kamiokande

Thursday, 20 September 2018 11:10 (35)

Presenter(s) : DE ROSA, Gianfranca

Session Classification : Photosensors and front-end electronics

Contribution ID : **28** Type : **not specified**

Front-end Electronics for Water Cherenkov Detectors

Thursday, 20 September 2018 11:45 (25)

Presenter(s) : ZIEMBICKI, Marcin (Warsaw University of Technology)

Session Classification : Electronics/DAQ

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

DAQ

Thursday, 20 September 2018 12:10 (25)

Presenter(s) : RICHARDS, Benjamin

Session Classification : Electronics/DAQ

Contribution ID : **30** Type : **not specified**

Triggering Water Cherenkov Detectors

Thursday, 20 September 2018 13:55 (25)

Presenter(s) : RICHARDS, Benjamin

Session Classification : Electronics/DAQ

Contribution ID : **31** Type : **not specified**

Hyper-K cavern + tank

Thursday, 20 September 2018 14:20 (30)

Presenter(s) : HIDE-KAZU TANAKA

Session Classification : Civil engineering

Contribution ID : **32** Type : **not specified**

IceCube construction, ice quality

Thursday, 20 September 2018 14:50 (30)

Presenter(s) : YANEZ GARZA, Juan Pablo

Session Classification : Civil engineering

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

SK / SK-Gd water system

Thursday, 20 September 2018 15:45 (30)

Presenter(s) : NAKANO, Yuuki (Kamioka Observatory, ICRR, The university of Tokyo)

Session Classification : Water or ice

Contribution ID : **34** Type : **not specified**

Radioactive contaminations; the case of SuperK-Gd

Thursday, 20 September 2018 16:15 (15)

Presenter(s) : LABARGA, Luis (UAM)

Session Classification : Water or ice

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

Proton decay results (mainly SK)

Friday, 21 September 2018 09:00 (30)

Presenter(s) : MIURA, Makoto

Session Classification : Physics results with WC experiments

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

Searching for astrophysical neutrinos and new physics with neutrino telescopes

Friday, 21 September 2018 09:30 (40)

Presenter(s) : NG, Kenny

Session Classification : Physics results with WC experiments

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

SN physics with SK / SK-Gd / HK

Friday, 21 September 2018 10:10 (25)

Presenter(s) : TAKEUCHI, Yasuo

Session Classification : Physics results with WC experiments

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

Dark matter searches with the Super-Kamiokande detector

Friday, 21 September 2018 11:00 (20)

Presenter(s) : MIJAKOWSKI, Piotr (NCBJ)

Session Classification : Physics results with WC experiments

Contribution ID : **39** Type : **not specified**

Status and prospects of the Antares and KM3NeT experiments

Wednesday, 19 September 2018 13:40 (35)

The ANTARES detector is the first undersea neutrino telescope. It has been taking data continuously since 2007, with the main goal of searching for astrophysical neutrinos in the TeV-PeV range.

The optical properties of the sea water, in particular the long scattering length, allow for a very good resolution in the reconstruction of the interaction vertex for neutrinos of all flavours and in the identification of neutrino direction. Its location in the Northern hemisphere guarantees an excellent point of view for the identification of neutrino sources located in the Southern Sky, with a special attention to the Galactic Plane and Centre.

The observations performed with ANTARES have allowed to put constraints on the origin of the cosmic neutrino flux discovered by the IceCube detector. Moreover, the ANTARES Collaboration is actively involved into a manifold multi-messenger program. In this contribution, the latest experimental results on the searches for neutrinos correlated with the recently discovered gravitational wave signals and FRB events will be discussed. Also the results on indirect searches for dark matter from massive objects like the Sun and the Galactic Center will be presented.

The high quality of the data collected with the ANTARES telescope and the competitiveness of the results have proven the tremendous potential of the sea water Cherenkov technique, paving the way to the new, larger telescope, KM3NeT.
KM3NeT is a research infrastructure hosting neutrino telescopes in the Mediterranean Sea. Two detectors using the same detection technology but different granularity are foreseen: ARCA, with an instrumented volume of a km3, at a depth of 3500 m offshore Capo Passero, Italy, designed to discover and observe high-energy neutrinos (TeV ÷ PeV) of cosmic origin, increasing the potential of the ANTARES telescope in the identification of neutrino sources; and ORCA, with an instrumented volume of a few Mton, at a depth of 2500 m offshore Toulon, France, optimized to measure atmospheric neutrinos with energies at the GeV scale, with the goal to study of the neutrinos mass hierarchy.

The KM3NeT Collaboration has started the construction of both detectors. The first detection units were deployed and analyses are ongoing to validate the detector performances. The status of the ARCA and ORCA detectors and the future prospects of the project will be presented.

Presenter(s) : MARGIOTTA, Annarita

Session Classification : Current WC running experiments

Contribution ID : **40** Type : **not specified**

Astrophysics results from IceCube (including DM)

Friday, 21 September 2018 11:20 (40)

Presenter(s) : KINTSCHER, Thomas

Session Classification : Physics results with WC experiments

Contribution ID : **41** Type : **not specified**

Theory-landscape and the place of WC detectors in neutrino oscillation studies (including global fits)

Friday, 21 September 2018 12:00 (40)

Presenter(s) : PEÑA-GARAY, Carlos (LSC, IFIC-UV)

Session Classification : Physics results with WC experiments

Contribution ID : **42** Type : **not specified**

Status of solar neutrino physics at SK (also mention SNO)

Friday, 21 September 2018 14:05 (30)

Presenter(s) : NAKANO, Yuuki (Kamioka Observatory, ICRR, The university of Tokyo)

Session Classification : Physics results with WC experiments

Contribution ID : **43** Type : **not specified**

Super-Kamiokande atmospheric neutrino oscillation results

Friday, 21 September 2018 14:35 (30)

Presenter(s) : KATAOKA , Yousuke

Session Classification : Physics results with WC experiments

Contribution ID : **44** Type : **not specified**

J-PARC status and outlook

Friday, 21 September 2018 15:05 (30)

Presenter(s) : KOBAYASHI, Takashi

Session Classification : Physics results with WC experiments

Contribution ID : **45** Type : **not specified**

Recent osc. results from T2K and NoVa

Friday, 21 September 2018 15:55 (30)

Presenter(s) : PAOLONE, Vittorio (University of Pittsburgh)

Session Classification : Physics results with WC experiments

Contribution ID : **46** Type : **not specified**

Future Outlook and Summary

Friday, 21 September 2018 16:25 (40)

Presenter(s) : NAKAYA, Tsuyoshi

Session Classification : Closing remarks

Contribution ID : **47** Type : **not specified**

Discussion

Friday, 21 September 2018 17:05 (30)

Session Classification : Closing remarks

Contribution ID : **48** Type : **not specified**

Bus tour

Contribution ID : **49** Type : **not specified**

Test

Presenter(s) : TEST, TEST

Session Classification : Closing remarks

Contribution ID : **50** Type : **not specified**

Announcements

Wednesday, 19 September 2018 17:20 (20)

Contribution ID : **51** Type : **not specified**

Dinner

Thursday, 20 September 2018 19:30 (150)

Session Classification : Dinner

Contribution ID : **52** Type : **not specified**

photos - link inside presentation file

Friday, 21 September 2018 17:35 (20)