

Magnificent CEvNS 2020

Monday 16 November 2020 - Friday 20 November 2020

Cyberspace



Book of Abstracts

Contents

COHERENT	1
New COHERENT Results	1
First constraints on coherent elastic neutrino nucleus scattering by CONUS	1
Invited Talk	1
Can Reactor IBD Experiments Help Reactor CEvNS Experiments?	1
Probing neutrino quantum decoherence at reactor experiments	1
Axionlike particles searches in nuclear reactor experiments	1
Measuring the weak mixing angle with reactor neutrino experiments	2
NUCLEUS	2
RICOCHET	2
CONNIE	2
MINER	2
BSM searches using the first CEvNS detection in liquid Argon	2
Constraints on neutrino electromagnetic properties from COHERENT elastic neutrino-nucleus scattering	2
Constraints on light vector mediators through coherent elastic neutrino nucleus scattering data from COHERENT	3
SNS Beams	3
Lessons learned from CCM120	3
Feasibility of a Liquid Xenon Detector for Reactor Neutrino Detection via CEvNS	3
A xenon-doped argon ionization detector for CEvNS and low-mass dark matter search	3
Reactor CEvNS with Noble Liquid Bubble Chambers	3
BULLKID: Low-threshold Kinetic Inductance Detectors for neutrino and dark matter searches	3

Coherent elastic and inelastic neutrino-nucleus scattering within many-body nuclear theory approach	4
Coherent elastic neutrino-nucleus scattering: EFT analysis and nuclear responses	4
Flavor dependence and radiative corrections in CEvNS	4
Future applications of precision CEvNS cross sections	4
Status of the RED-100 experiment	4
Research on Coherent Neutrino Nucleus Elastic Scattering with the TEXONO Program	4
NEON	5
Lepton Magnetic Moments in SUSY \tilde{L} - \tilde{L} Model in Light of CEvNS and LHC data	5
Neutrino NSI and Global Analyses / Axion-like Particles in the Laboratory	5
Statistical Analysis of the COHERENT Data	5
Study of the ionization efficiency for nuclear recoils in pure crystals	5
NEST: A Powerful Monte Carlo Software for Simulating CEvNS in Noble Elements	5
Design of keV-scale neutron sources using Fe and Sc	6
The CRAB project: Calibration at the 100 eV scale using neutron capture-induced nuclear recoils	6
An overview of the GADMC and its neutrino physics program	6
Studying neutrino-argon charged-current interactions with the COHERENT liquid argon detector	6
Neutrino floors	6
XENON nT	6
SuperCDMS + QF measurements	6
NEWS-G	7
COHERENT LAr	7
Dark Matter Searches at Stopped-Pion CEvNS Experiments	7
Astronomy in the Lab: Supernova Forecast and Origin of Supermassive Black Holes	7
Status of the CYGNUS Directional Recoil Observatory Project	7
Directional CEvNS Measurement at Fermilab	7
PALEO	7
Searches for new physics with a stopped-pion source at the Fermilab accelerator complex	7
Skipper CCD for the detection of nuclear-reactor neutrinos	8

Magnetic Microcalorimeters for CEvNS Detection: Fast Cryogenic Detectors with Phonon Pulse Shape Discrimination	8
RES-NOVA: archaeological Pb observatory for astrophysical neutrino sources	8
Cryogenic Diamond and SiC Particle Detectors	8
Summary: Experiments	8
Summary Theory	8
Measuring the Weak Charge Radius of 208-Pb with PREX-II	8
A set of isotopically enriched detectors as a tool for precise CEvNS measurements	9
Future constraints on lepton unitarity and light-sterile neutrinos from CEvNS	9
Poster A: Scintillation yield from electronic and nuclear recoils in superfluid He-4	9
Poster B: Supernovae neutrino detection via coherent scattering off silicon nuclei	9
Poster C: Calibration of CENNS-10 liquid argon detector with 83mKr source	9
Poster D: The CEvNS Glow of a Supernova	9
Poster E: NUCLEUS - Search for coherent, elastic Scattering of Reactor-Antineutrinos off Nuclei under Above-Ground Conditions	10
Poster F: First Measurement of CEvNS on a Liquid Argon Target from the COHERNET Collaboration	10
Poster H - A Platform for Characterizing the Thermodynamic Stability and Proportional Scintillation Signals of Argon-Xenon Mixtures	10
Poster I: Quenching Factor Measurements in Germanium at TUNL	10
Poster J: COHERENT: A future ton-scale LAr detector for CEvNS	10
Phonon-mediated KID based detectors for CEvNS	10
Panel	11

Session / 1

COHERENT

Corresponding Author: aleksei.konovalov@phystech.edu

Session / 2

New COHERENT Results

Corresponding Author: daniel.pershey@duke.edu

Session / 3

First constraints on coherent elastic neutrino nucleus scattering by CONUS

Corresponding Author: janina.hakenmueller@mpi-hd.mpg.de

Session / 4

Invited Talk

Session / 39

Can Reactor IBD Experiments Help Reactor CEvNS Experiments?

Corresponding Author: me.bryce@gmail.com

Session / 40

Probing neutrino quantum decoherence at reactor experiments

Corresponding Author: valentina.deromeri@gmail.com

Session / 41

Axionlike particles searches in nuclear reactor experiments

Corresponding Author: daristi@gmail.com

Session / 42

Measuring the weak mixing angle with reactor neutrino experiments

Corresponding Author: ivan.martinezsoler@northwestern.edu

Session / 43

NUCLEUS

Corresponding Author: riccardo.cerulli@roma2.infn.it

Session / 44

RICOCHET

Corresponding Author: t.salagnac@ipnl.in2p3.fr

Session / 45

CONNIE

Corresponding Author: philipe.mota@gmail.com

Session / 46

MINER

Corresponding Author: rupak.mahapatra@gmail.com

Session / 47

BSM searches using the first CEvNS detection in liquid Argon

Corresponding Author: mariam@ific.uv.es

Session / 48

Constraints on neutrino electromagnetic properties from COHERENT elastic neutrino-nucleus scattering

Corresponding Author: zhangyiyu@ihep.ac.cn

Session / 49

Constraints on light vector mediators through coherent elastic neutrino nucleus scattering data from COHERENT

Corresponding Author: nicolacargioli@gmail.com

Session / 50

SNS Beams

Corresponding Author: rrap@andrew.cmu.edu

Session / 51

Lessons learned from CCM120

Corresponding Author: rthorn@lanl.gov

Session / 52

Feasibility of a Liquid Xenon Detector for Reactor Neutrino Detection via CEvNS

Corresponding Author: nikx@physics.ucsd.edu

Session / 53

A xenon-doped argon ionization detector for CEvNS and low-mass dark matter search

Corresponding Author: xujingke@gmail.com

Session / 54

Reactor CEvNS with Noble Liquid Bubble Chambers

Session / 55

BULLKID: Low-threshold Kinetic Inductance Detectors for neutrino and dark matter searches

Corresponding Author: angelo.cruciani@roma1.infn.it

Session / 56

Coherent elastic and inelastic neutrino-nucleus scattering within many-body nuclear theory approach

Corresponding Author: vpandey@fnal.gov

Session / 57

Coherent elastic neutrino-nucleus scattering: EFT analysis and nuclear responses

Session / 58

Flavor dependence and radiative corrections in CEvNS

Corresponding Author: oleksandr.tomalak@uky.edu

Session / 59

Future applications of precision CEvNS cross sections

Corresponding Author: rpl225@uky.edu

Session / 60

Status of the RED-100 experiment

Corresponding Author: avrinel@yandex.ru

Session / 61

Research on Coherent Neutrino Nucleus Elastic Scattering with the TEXONO Program

Corresponding Author: htwong@phys.sinica.edu.tw

Session / 62

NEON

Corresponding Author: hyunsulee@ibs.re.kr

Session / 63

Lepton Magnetic Moments in SUSY $L\text{-}L$ Model in Light of CEvNS and LHC data

Corresponding Author: heerakb91@gmail.com

Session / 64

Neutrino NSI and Global Analyses / Axion-like Particles in the Laboratory

Corresponding Author: thompson@tamu.edu

Session / 65

Statistical Analysis of the COHERENT Data

Corresponding Author: jgehrlein@bnl.gov

Session / 66

Study of the ionization efficiency for nuclear recoils in pure crystals

Corresponding Author: youssef.sarkis@correo.nucleares.unam.mx

Session / 67

NEST: A Powerful Monte Carlo Software for Simulating CEvNS in Noble Elements

Corresponding Author: mszydagis@albany.edu

Session / 68

Design of keV-scale neutron sources using Fe and Sc

Corresponding Author: pratyushkuma@umass.edu

Session / 69

The CRAB project: Calibration at the 100 eV scale using neutron capture-induced nuclear recoils

Corresponding Author: david.lhuillier@cea.fr

Session / 70

An overview of the GADMC and its neutrino physics program

Corresponding Author: claudios@princeton.edu

Session / 71

Studying neutrino-argon charged-current interactions with the COHERENT liquid argon detector

Corresponding Author: erin.conley@duke.edu

Session / 72

Neutrino floors

Corresponding Author: ciaran.ohare@sydney.edu.au

Session / 74

XENON nT

Session / 75

SuperCDMS + QF measurements

Corresponding Author: golwala@caltech.edu

Session / 76

NEWS-G

Session / 77

COHERENT LAr

Corresponding Author: jdaughhe@utk.edu

Session / 78

Dark Matter Searches at Stopped-Pion CEvNS Experiments

Corresponding Author: doojin.kim@cern.ch

Session / 79

Astronomy in the Lab: Supernova Forecast and Origin of Super-massive Black Holes

Session / 80

Status of the CYGNUS Directional Recoil Observatory Project

Corresponding Author: sevahsen@hawaii.edu

Session / 81

Directional CEvNS Measurement at Fermilab

Session / 82

PALEO

Session / 83

Searches for new physics with a stopped-pion source at the Fermilab accelerator complex

Session / 84

Skipper CCD for the detection of nuclear-reactor neutrinos

Corresponding Author: fmoroni.guillermo@gmail.com

Session / 85

Magnetic Microcalorimeters for CEvNS Detection: Fast Cryogenic Detectors with Phonon Pulse Shape Discrimination

Session / 86

RES-NOVA: archaeological Pb observatory for astrophysical neutrino sources

Session / 88

Cryogenic Diamond and SiC Particle Detectors

Corresponding Author: kurinsky@fnal.gov

Session / 89

Summary: Experiments

Corresponding Author: matthieu.vivier@cea.fr

Session / 90

Summary Theory

Corresponding Author: matteo.cadeddu@ca.infn.it

Session / 94

Measuring the Weak Charge Radius of 208-Pb with PREX-II

Corresponding Author: reedbr@iu.edu

Session / 102

A set of isotopically enriched detectors as a tool for precise CEvNS measurements

Corresponding Author: gsanchez@fis.cinvestav.mx

Session / 103

Future constraints on lepton unitarity and light-sterile neutrinos from CEvNS

Corresponding Author: oscsandmun@gmail.com

Session / 109

Poster A: Scintillation yield from electronic and nuclear recoils in superfluid He-4

Corresponding Author: biekerta@berkeley.edu

Session / 110

Poster B: Supernovae neutrino detection via coherent scattering off silicon nuclei

Corresponding Author: afoguel@usp.br

Session / 111

Poster C: Calibration of CENNS-10 liquid argon detector with 83mKr source

Corresponding Author: aspelene@gmail.com

Session / 112

Poster D: The CEvNS Glow of a Supernova

Corresponding Author: adryanna.smith@duke.edu

Session / 113

Poster E: NUCLEUS - Search for coherent, elastic Scattering of Reactor-Antineutrinos off Nuclei under Above-Ground Conditions

Corresponding Author: andreas.erhart@tum.de

Session / 115

Poster F: First Measurement of CEvNS on a Liquid Argon Target from the COHERNET Collaboration

Session / 119

Poster H - A Platform for Characterizing the Thermodynamic Stability and Proportional Scintillation Signals of Argon-Xenon Mixtures

Corresponding Author: bernard5@llnl.gov

Session / 121

Poster I: Quenching Factor Measurements in Germanium at TUNL

Corresponding Author: long.li@duke.edu

Session / 123

Poster J: COHERENT: A future ton-scale LAr detector for CEvNS

Corresponding Author: maximilianhughes2@gmail.com

Session / 124

Phonon-mediated KID based detectors for CEvNS

Corresponding Author: golwala@caltech.edu

Session / 125

Panel

Corresponding Authors: newbyrj@ornl.gov, bonifazi@if.ufrj.br, xujingke@gmail.com, llhsu@fnal.gov