

# Rapport d'activité LPNHE 2022–2023

## Liste de publications du groupe Neutrinos

- [1] K. Abe, N. Akhlaq, R. Akutsu et al. « First measurement of muon neutrino charged-current interactions on hydrocarbon without pions in the final state using multiple detectors with correlated energy spectra at T2K ». *Phys. Rev. D* 108.11, 112009 (déc. 2023), p. 112009. DOI : [10.1103/PhysRevD.108.112009](https://doi.org/10.1103/PhysRevD.108.112009). arXiv : [2303.14228](https://arxiv.org/abs/2303.14228) [hep-ex].
- [2] K. Abe, N. Akhlaq, R. Akutsu et al. « Measurements of neutrino oscillation parameters from the T2K experiment using  $3.6 \times 10^{21}$  protons on target ». *European Physical Journal C* 83.9, 782 (sept. 2023), p. 782. DOI : [10.1140/epjc/s10052-023-11819-x](https://doi.org/10.1140/epjc/s10052-023-11819-x). arXiv : [2303.03222](https://arxiv.org/abs/2303.03222) [hep-ex].
- [3] K. Abe, N. Akhlaq, R. Akutsu et al. « Measurements of the  $\nu_\mu$  and  $\bar{\nu}_\mu$ -induced coherent charged pion production cross sections on  $^{12}\text{C}$  by the T2K experiment ». *Phys. Rev. D* 108.9, 092009 (nov. 2023), p. 092009. DOI : [10.1103/PhysRevD.108.092009](https://doi.org/10.1103/PhysRevD.108.092009). arXiv : [2308.16606](https://arxiv.org/abs/2308.16606) [hep-ex].
- [4] K. Abe, N. Akhlaq, R. Akutsu et al. « Scintillator ageing of the T2K near detectors from 2010 to 2021 ». *Journal of Instrumentation* 17.10, P10028 (oct. 2022), P10028. DOI : [10.1088/1748-0221/17/10/P10028](https://doi.org/10.1088/1748-0221/17/10/P10028).
- [5] K. Abe, N. Akhlaq, R. Akutsu et al. « Updated T2K measurements of muon neutrino and antineutrino disappearance using  $3.6 \times 10^{21}$  protons on target ». *Phys. Rev. D* 108.7, 072011 (oct. 2023), p. 072011. DOI : [10.1103/PhysRevD.108.072011](https://doi.org/10.1103/PhysRevD.108.072011).
- [6] A. Acharya, H. Adhikary, K. K. Allison et al. «  $K^*(892)^0$  meson production in inelastic  $p + p$  interactions at 40 and 80 GeV/c beam momenta measured by NA61/SHINE at the CERN SPS ». *European Physical Journal C* 82.4, 322 (avr. 2022), p. 322. DOI : [10.1140/epjc/s10052-022-10281-5](https://doi.org/10.1140/epjc/s10052-022-10281-5).
- [7] A. Acharya, H. Adhikary, K. K. Allison et al. «  $K_S^0$  meson production in inelastic  $p+p$  interactions at 158 GeV/c beam momentum measured by NA61/SHINE at the CERN SPS ». *European Physical Journal C* 82.1, 96 (jan. 2022), p. 96. DOI : [10.1140/epjc/s10052-021-09976-y](https://doi.org/10.1140/epjc/s10052-021-09976-y). arXiv : [2106.07535](https://arxiv.org/abs/2106.07535) [hep-ex].
- [8] H. Adhikary, P. Adrich, K. K. Allison et al. « Measurements of  $\pi^+$ ,  $\pi^-$ ,  $p$ ,  $\bar{p}$ ,  $K^+$  and  $K^-$  production in 120 GeV/c  $p + C$  interactions ». *Phys. Rev. D* 108.7, 072013 (oct. 2023), p. 072013. DOI : [10.1103/PhysRevD.108.072013](https://doi.org/10.1103/PhysRevD.108.072013). arXiv : [2306.02961](https://arxiv.org/abs/2306.02961) [hep-ex].

- [9] H. Adhikary, P. Adrich, K. K. Allison et al. « Search for the critical point of strongly-interacting matter in  $^{40}\text{Ar} + ^{45}\text{Sc}$  collisions at 150A Ge V /c using scaled factorial moments of protons ». *European Physical Journal C* 83.9, 881 (sept. 2023), p. 881. DOI : [10.1140/epjc/s10052-023-11942-9](https://doi.org/10.1140/epjc/s10052-023-11942-9). arXiv : [2305.07557](https://arxiv.org/abs/2305.07557) [nucl-ex].
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