Publication List

Anil Kumar

Updated on February 9, 2024

I Papers Published in International Refereed Journals (9)

1. **Measurement of atmospheric neutrino mixing with improved IceCube DeepCore calibration and data processing**
   R. Abbasi et al. (IceCube Collaboration)
   Physical Review D, 108 (2023), 012014
   e-Print arXiv: 2304.12236 [hep-ph]

2. **Probing dark matter inside Earth using atmospheric neutrino oscillations at INO-ICAL**
   Anuj Kumar Upadhyay, Anil Kumar, Sanjib Kumar Agarwalla, Amol Dighe
   Physical Review D, 107 (2023) 11, 115030
   e-Print arXiv: 2112.14201 [hep-ph]

3. **Discriminating between Lorentz violation and non-standard interactions using core-passing atmospheric neutrinos at INO-ICAL**
   Sadashiv Sahoo, Anil Kumar, Sanjib Kumar Agarwalla, Amol Dighe
   Physics Letters B, 841 (2023) 137949
   e-Print arXiv: 2205.05134 [hep-ph]

4. **Locating the core-mantle boundary using oscillations of atmospheric neutrinos**
   Anuj Kumar Upadhyay, Anil Kumar, Sanjib Kumar Agarwalla, Amol Dighe
   Journal of High Energy Physics, 04 (2023) 068
   e-Print arXiv: arXiv:2211.08688 [hep-ph]

5. **Probing Lorentz Invariance Violation with Atmospheric Neutrinos at INO-ICAL**
   Sadashiv Sahoo, Anil Kumar, Sanjib Kumar Agarwalla
   Journal of High Energy Physics, 03 (2022) 050
   e-Print arXiv: 2110.13207 [hep-ph]

6. **Validating the Earth's Core using Atmospheric Neutrinos with ICAL at INO**
   Anil Kumar, Sanjib Kumar Agarwalla
   Journal of High Energy Physics, 08 (2021) 139
   e-Print arXiv: 2104.11740 [hep-ph]

7. **A New Approach to Probe Non-Standard Interactions in Atmospheric Neutrino Experiments**
   Anil Kumar, Amina Khatun, Sanjib Kumar Agarwalla, Amol Dighe
   Journal of High Energy Physics, 04 (2021) 159
   e-Print arXiv: 2101.02607 [hep-ph]

8. **From oscillation dip to oscillation valley in atmospheric neutrino experiments**
   Anil Kumar, Amina Khatun, Sanjib Kumar Agarwalla, Amol Dighe
   The European Physical Journal C, volume 81 (2021) 2, 190
   e-Print arXiv: 2006.14529 [hep-ph]

9. **A compact cosmic muon veto detector and possible use with the Iron Calorimeter detector for neutrinos**
   Neha Panchal, S. Mohanraj, A. Kumar, T. Dey, G. Majumder, R. Shinde, P. Verma, B. Satyanarayana, V.M. Datar
   Journal of Instrumentation, 12 (2017) 11, T11002
   e-Print arXiv: 1708.08597 [physics.ins-det]

II Papers Communicated to International Refereed Journals (1)

1. **Constraining non-unitary neutrino mixing using matter effects in atmospheric neutrinos at INO-ICAL**
   Sadashiv Sahoo, Sudipta Das, Anil Kumar, Sanjib Kumar Agarwalla
   Submitted in Journal of High Energy Physics
   e-Print arXiv: 2309.16942 [hep-ph]

III Conference Proceedings (11)

1. **Probing the interior of Earth using oscillating neutrinos at INO-ICAL**
   Anil Kumar, Anuj Kumar Upadhyay, Sanjib Kumar Agarwalla, Amol Dighe,
   Proceedings of the European Physical Society Conference on High Energy Physics (EPS-HEP 2023), 21-25 Aug 2023, University of Hamburg, Germany
   PoS(EPS-HEP2023)198, e-Print arXiv: 2401.17416 [hep-ph]

2. **Latest Muon Neutrino Disappearance Results from IceCube DeepCore**
   Anil Kumar (for the IceCube Collaboration),
   Proceedings of the European Physical Society Conference on High Energy Physics (EPS-HEP 2023), 21-25 Aug 2023, University of Hamburg, Germany
   PoS(EPS-HEP2023)179

3. **Earth tomography with oscillating neutrinos at ICAL**
   Anuj Kumar Upadhyay, Anil Kumar, Sanjib Kumar Agarwalla, Amol Dighe
   Proceedings of The XXV DAE-BRNS High Energy Physics (HEP) Symposium 2022, 12-16 Dec, 2022, IISER, Mohali, India,
   Submitted

4. **Neutrino Oscillations in the Earth: A Unique Tool to Probe Dark Matter Inside the Core**
   Anuj Kumar Upadhyay, Anil Kumar, Sanjib Kumar Agarwalla, Amol Dighe
   Proceedings of The 23rd International Workshop on Neutrinos from Accelerators (NuFact 2022), 31 Jul to 6 Aug, 2022, Salt Lake City, UT, USA
   Phys. Sci. Forum 2023, 8(1), 54

5. **Discriminating Between Lorentz Violation and Non-Standard Interactions Using Core-Passing Atmospheric Neutrinos at INO-ICAL**
   Sadashiv Sahoo, Anil Kumar, Sanjib Kumar Agarwalla, Amol Dighe
   Proceedings of The Ninth Meeting on CPT and Lorentz Symmetry, (Online) 17 May - 26 May, 2022, Indiana University, Bloomington
   CPT and Lorentz Symmetry. May 2023, 226-228

6. **Exploring NSI using oscillation dip and valley in atmospheric neutrino experiments**
   Anil Kumar, Amina Khatun, Sanjib Kumar Agarwalla, Amol Dighe
   Proceedings of The 17th International Conference on Topics in Astroparticle and Underground Physics (TAUP2021), Online Conference, 26 Aug - 30 Sep, 2021
   Journal of Physics: Conference Series 2156 (2021) 012119

7. **Exploring the Violation of Lorentz Invariance using Atmospheric Neutrinos at INO-ICAL**
   Sadashiv Sahoo, Anil Kumar, Sanjib Kumar Agarwalla
   Proceedings of The 17th International Conference on Topics in Astroparticle and Underground Physics (TAUP2021), Online Conference, 26 Aug - 30 Sep, 2021
   Journal of Physics: Conference Series 2156 (2021) 012238

8. **Probing the Earth's Core using Atmospheric Neutrinos at INO**
   Anil Kumar, Sanjib Kumar Agarwalla
   Proceedings of The European Physical Society Conference on High Energy Physics (EPS-HEP2021), Online Conference, 26-30 Jul, 2021
   PoS(EPS-HEP2021)257, e-Print arXiv: 2110.08333 [hep-ph]

9. **Probing NSI in Atmospheric Neutrino Experiments using Oscillation Dip and Valley**
   Anil Kumar, Amina Khatun, Sanjib Kumar Agarwalla, Amol Dighe
   Proceedings of the XXIV DAE-BRNS High Energy Physics Symposium 2020, 14-18 Dec, 2020, NISER, Bhubaneswar, India
   Springer Proc. Phys. 277 (2022) 525-529, e-Print arXiv: 2104.06955 [hep-ph]

10. **Effect of Variation of Surface Resistivity of Graphite Layer in RPC**
    Anil Kumar, V. Kumar, S. Mukhopadhyay, S. Sarkar, and N. Majumdar
    Proceedings of the XXIII DAE-BRNS High Energy Physics Symposium 2018, 10-14 Dec, 2018, IIT, Madras, India
    Springer Proc. Phys. 261 (2021) 725-730

11. **A compact cosmic muon veto detector and possible use with the Iron Calorimeter detector for neutrinos**
    Neha, S. Mohanraj, A. Kumar, T. Dey, G. Majumder, R. Shinde, P. Verma, B. Satyanarayana, V.M. Datar
    Proceedings of the 62nd DAE-BRNS Symposium on Nuclear Physics, 20-24 Dec, 2017, Patiala, India,
    DAE Symp. Nucl. Phys. 62 (2017) 1076-1077