

# Publication List

Anil Kumar

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## I Papers Published in International Refereed Journals (9)

- 1. Measurement of atmospheric neutrino mixing with improved IceCube Deep-Core 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](#)

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](#)