

# Abner Soffer

## Journal publications

(updated October 2022)

1. E. Bertholet and A. Soffer, arXiv:2501.00857 (**submitted** to International Journal of Modern Physics A), “Estimating the track-reconstruction efficiency in phenomenological proposals of long-lived-particle searches”.
2. Heavy Flavor Averaging Group (HFLAV), “Averages of  $b$ -hadron,  $c$ -hadron, and  $\tau$ -lepton properties as of 2023”, arXiv:2411.18639 (**submitted** to Phys. Rev. D).
3. Y. Afik, Y. Kats, J.R. Munos de Nova, A. Soffer, D. Uzan, arXiv:2406.04402 (submitted to Phys. Rev. Lett.), “Entanglement and Bell nonlocality with bottom-quark pairs at hadron colliders”.
4. Belle Collaboration, Phys. Rev. D 109 (2024) 11, arXiv:2402.02580, “Search for a heavy neutral lepton that mixes predominantly with the tau neutrino”.
5. K. Cheung, Y. Kim, Y. Kwon, C.J. Ouseph, A. Soffer, Z.S. Wang, arXiv:2401.03168, “Probing dark photons from a light scalar at Belle II”.
6. C. O. Dib, J. C. Helo, V. E. Lyubovitskij, N. A. Neill, A. Soffer, Z. S. Wang, JHEP 02 (2023) 224, arXiv:2208.06421, “Probing R-parity violation in B-meson decays to a baryon and a light neutralino”.
7. Heavy Flavor Averaging Group (HFLAV), “Averages of  $b$ -hadron,  $c$ -hadron, and  $\tau$ -lepton properties as of 2021”, Phys. Rev. D 107 (2023) 052008, arXiv:2206.07501.
8. ATLAS Collaboration, “Search for heavy neutral leptons in decays of W bosons using a dilepton displaced vertex in  $\sqrt{s} = 13$  TeV pp collisions with the ATLAS detector”, Phys. Rev. Lett., Phys.Rev.Lett. 131, 061803, arXiv:2204.11988.
9. K. Cheung, A. Soffer, Z.S. Wang, Y.H. Wu, JHEP 11 (2021) 218, arXiv:2108.11094, “Probing charged lepton flavor violation with axion-like particles at Belle II”.
10. E. Bertholet, S. Chakraborty, V. Loladze, T. Okui, A. Soffer, K. Tobioka, arXiv:2108.10331, to appear in Phys. Rev. D., “Heavy QCD Axion at Belle II: Prompt and Displaced Signal”.
11. A. Dery, Y. Grossman, S. Schact, A. Soffer, JHEP 05 (2021) 179, arXiv:2101.02560, “Probing the  $\Delta U = 0$  rule in three body charm decays”.
12. S. Dey, C.O. Dib, J.C. Helo, M. Nayak, N.A. Neill, A. Soffer, S.Z. Wang, J. High Energ. Phys. 2021, 211 (2021), arXiv:2012.00438, “Long-lived light neutralinos at Belle II”.
13. HFLAV Collaboration, Eur. Phys. J. C 81 (2021) 3, 226, arXiv:1909.12524, “Averages of  $b$ -hadron,  $c$ -hadron, and  $\tau$ -lepton properties as of 2018”.
14. Particle Data Group, Review of Particle Physics, PTEP 2020 (2020) 8, 083C01
15. C.O. Dib, J.C. Helo, M. Nayak, N.A. Neill, A. Soffer, J. Zamora-Saa, Phys. Rev. D 101 (2020), 093003, arXiv:1908.09719, “Searching for a Sterile Neutrino in Tau Decays at B-factories”.
16. ATLAS Collaboration, JHEP 10 (2019) 265, arXiv:1905.09787, “Search for heavy neutral leptons in decays of W bosons produced in 13 TeV pp collisions using prompt and displaced signatures with the ATLAS detector”.
17. J. Duarte-Campderros, G. Perez, M. Schlaffer, A. Soffer, Phys. Rev. D 101, 115005, arXiv:1811.09636, “Probing the strange Higgs coupling at  $e^+e^-$  colliders using light-jet flavor tagging”.
18. L. Lee, C. Ohm, A. Soffer, T. Yu, arXiv:1810.12602, Prog. Part. Nucl. Phys. 106 (2019) 210, “Collider Searches for Long-Lived Particles Beyond the Standard Model”.
19. D. Aloni, Y. Grossman, A. Soffer, Phys.Rev. D98 (2018) 035022, arXiv:1806.04146 (selected as “Editor’s suggestion”), “Measuring CP violation in  $b \rightarrow c\tau\bar{\nu}_\tau$  using excited charm mesons”.
20. M. Kohda, T. Modak, A. Soffer, Phys. Rev. D 97, 115019 (2018), arXiv:1803.07492, “Identifying a  $Z'$  behind  $b \rightarrow s\ell\ell$  anomalies at LHC”.
21. ATLAS Collaboration, Phys. Rev. D 97, 052012, arXiv:1710.04901 (2017), “Search for long-lived, massive particles in events with displaced vertices and missing transverse momentum in  $\sqrt{s} = 13$  TeV pp collisions with the ATLAS detector”.

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29. The BABAR Collaboration, Phys. Rev. D86, 092005 (2012), “Search for resonances decaying to  $\eta_c\pi^+\pi^-$  in two-photon interactions”.
30. The ATLAS Collaboration, Phys. Lett. B 707, 478 (2012), arXiv:1109.2242, “Search for displaced vertices arising from decays of new heavy particles in 7 TeV pp collisions at ATLAS”.
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32. Shmuel Nussinov and Abner Soffer, Phys. Rev. D 80, 033010, 2009, “Estimate of the branching fraction  $\tau^- \rightarrow \eta' \pi^- \nu_\tau$ ”.
33. A. Soffer, W. Toki and F. Winklmeier, Phys. Rev. D 79, 014026, 2009, “CP-violation parameters from decay rates of  $B^\pm \rightarrow DK^\pm, D \rightarrow$  multibody final states”.
34. Shmuel Nussinov and Abner Soffer, Phys. Rev. D 78, 033006, 2008, “Estimate of the branching fraction  $\tau^- \rightarrow \eta \pi^- \nu_\tau$ , the  $a_0^-(980)$ , and non-standard weak interactions”.
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50. A. Soffer, Phys. Rev. D60, 54032, 1999 “Discrete Ambiguities in the Measurement of the Weak Phase  $\gamma$ ”.
51. CLEO Collaboration, Phys. Rev. Lett. 80, 5493, 1998, “First Observation of the Cabibbo Suppressed Decay  $B^- \rightarrow D^0 K^-$ ”.