

# Selected Recent Papers in Particle Physics

1. Observation of $B_c(1P)^+$ decays to $B_c^+\gamma$ $B_c^+ \rightarrow J/\psi(1S)(\rightarrow \mu^+\mu^-)\pi^+$	<a href="#">2507.02149</a> , LHCb
2. Doubly charmed $\Xi_{cc}^+$ baryon (ccd) Decaying to $\Lambda_c^+K^-\pi^+$	<a href="#">2603.28456</a> , LHCb
3. Scalar glueballs are smaller than other hadrons 0.25 fm according to lattice calculations	<a href="#">2508.21821</a> , R. Abbott et al.
4. $\Sigma^+ \rightarrow n\pi^+$ and $p\pi^0$ , ratio is now = 1 $\Delta I = \frac{3}{2}$ is significant, more than $5\sigma$	<a href="#">2512.09628</a> , BESIII
5. $\pi_1(1600) \rightarrow \eta'\pi$ seen in $\chi_{c1} \rightarrow \eta'\pi^+\pi^-$	<a href="#">2604.12524</a> , BESIII
6. $\chi_{c0}$ mixes with excited $0^{++}$ glueball $\chi_{c0}$ decay to hadrons $2 \times \chi_{c2}$ , weaker e.m. production	<a href="#">2604.12895</a> , U. Wiedner
7. HIAF = heavy ion facility, China, CANTON- $\mu$ Proposal: Next-Generation Muon g-2 at Sub-0.1 ppm Precision	<a href="#">2512.11486</a> , Ce. Zhang et al.
8. Record number of $\bar{p}$ in GBAR $6 \times 10^7$ trapped	<a href="#">2603.21168</a> , B. Lee et al.
9. $\text{Ce}\nu\text{NS}$ on $8\text{B } 5_{-3}^{+3} \times 10^{-6}$	<a href="#">2604.06002</a> , XENONnT
10. CP violation in $B^\pm \rightarrow \rho K^{*\pm}$ , 0.5 asymmetry	<a href="#">2508.13563</a> , LHCb
11. $\nu$ detector in lake Geneva SINE/UNDINE $\nu$ from HL-LHC	<a href="#">2501.08278</a> , N.W. Kamp et al.
12. $B^+ \rightarrow \mu^+\nu_\mu$ is helicity suppressed SM: $4.18 \times 10^{-7}$ , Belle: $< 7 \times 10^{-7}$	<a href="#">2602.09800</a> , Belle
13. Ultraheavy DM dark nuclei	<a href="#">2602.09421</a> , Dark-Side 50
14. $K^-{}^{3,4}\text{He} \rightarrow \Lambda^3,4\text{H}\pi^0$	<a href="#">PLB 873 (2026) 140163</a> , JPARC (E73)
15. $\pi(1300)$ poles from LGT	<a href="#">PRL 136 (2026) 141901</a> , H. Yan et al.
16. SEDRUN access shaft Gravitational waves & dark matter	<a href="#">2604.12895</a> , M. Guinchard et al.
17. NUCLEUS commissioning CaWO <sub>4</sub> equipped with transition edge detectors	<a href="#">2508.02488</a> , NUCLEUS
18. $J/\psi J/\psi$ is repulsive (lattice) How about the 6200 state?	<a href="#">EPJC 85 (2025) 458</a> , Yu. Meng et al.
19. Single and double polarization $\gamma p \rightarrow p\pi^+\pi^-$ (CLAS) Linear beam and transverse target polarization	<a href="#">PRC 112 (2025) 035201</a> , P. Roy et al.

20. DAMIC-M at Modane DM interaction with electrons (CCD) 1-1000 MeV	<a href="#">2503.14617</a> , DAMIC-M
21. Cosmic Ray Muography	<a href="#">World Scientific</a> , P. Scampoli, A. Ariga
22. $\bar{n}p$ cross sections to $2\pi^+\pi^-n\pi^0$ (200-1174 MeV/c) From $J/\psi \rightarrow p\bar{n}\pi^-$ on cooling oil of beam pipe	<a href="#">2511.21462</a> , BESIII
23. Charmless $B^+$ decay to $\bar{\Lambda}p\bar{p}p$ $\sim 2 \times 10^{-7}$	<a href="#">PRL 135 (2025) 261901</a> , LHCb
24. $d$ -production in collisions not direct mostly via $\Delta^+$ production, $\Delta^+ \rightarrow n\pi^\pm$ , $np \rightarrow d$	<a href="#">Nature 648 (2025) 306</a> , ALICE
25. MilliQuan detector 33 m from CMS charges $\leq 0.24e$ with scintillators, $m > 450$ MeV	<a href="#">2506.02251</a> , S. Alcott et al.
26. $D^0 \rightarrow \mu^+\mu^-$ from $D^{*+} \rightarrow D^0\pi^+ < 2.4 \times 10^{-9}$	<a href="#">2506.06152</a> , CMS
27. COSINUS LNGS, 8 NaI, end of 2025	<a href="#">2604.02429</a> , G. Angloher et al.
28. $\Sigma^+ \rightarrow p\mu^+\mu^-$ $(1.08 \pm 0.17) \times 10^{-8}$ Rarest baryon decay observed, loop	<a href="#">PRL 135 (2025) 051801</a> , LHCb
29. More light when particles traverse $\text{PbWO}_4$ (shower) along the crystal axis	<a href="#">2404.12016</a> , M. Soldani et al.
30. $\eta/\eta'$ mixing angle from $B^0, B_s^0 \rightarrow J/\psi\eta, \eta'$ Glue in $\eta'$	<a href="#">2507.13914</a> , LHCb
31. The Pomeron is a spin 2 (based on STAR) $\bar{p}p$ elastic scattering asymmetry	<a href="#">PLB 763 (2016) 382</a> , C. Ewerz et al.
32. MEG II $\mu \rightarrow e\gamma$ , $< 1.5 \times 10^{-13}$	<a href="#">2504.15711</a> , MEGII
33. 8B solar $\nu$ interact with $^{13}\text{C}$ (1% in C), 4.7 eVt $\nu_e^{13}\text{C} \rightarrow ^{13}\text{Ne}^-$ detect both $e^-$ , and $e^+$ from $^{13}\text{C}$ decay	<a href="#">2508.20844</a> , SNO+
34. IDEA detector for FCC-ee	<a href="#">2510.26195</a> , A. Ilg (UZH)
35. R-ratio $> 3\sigma$ too high from BESIII3 compared to theory	<a href="#">2509.12956</a> , D. Boito, M. Caram
36. $a_\tau(SM) \simeq 10^{-3}$ , ATLAS: $-5.7 \rightarrow 2.4$ % CMS: $-0.4 \rightarrow 0.6$ %	<a href="#">2508.05935</a> , Y. Nakai et al.
37. $\Omega(2012)^- \rightarrow \Xi^- K_S$	<a href="#">2502.18063</a> , ALICE
38. $\pi^0$ lifetime, Primakoff effect (CERN) 2 tungsten foils, incident proton, positron in lead glass	<a href="#">PL 158B (1985) 81</a> , H. Atherton et al.