Errata

Kodansha Blue Backs "Origins of the Universe and Matter: Understanding the Invisible World"

We will sequentially list the errata discovered after the publication.

1. Page 272, Fig. 9-3: Add 0 to the bottom of the second plot from the top.

2. Page 272, Fig. 9-3, second vertical axis label: “（Number of Events - bkg Number of Events）” ⇨” (Number of Events - bkg Number of Events) / GeV”.

Fig.9-3_original should read Fig.9-3_revised: (Refer to the 2 red parts in Fig.9-3_revised)

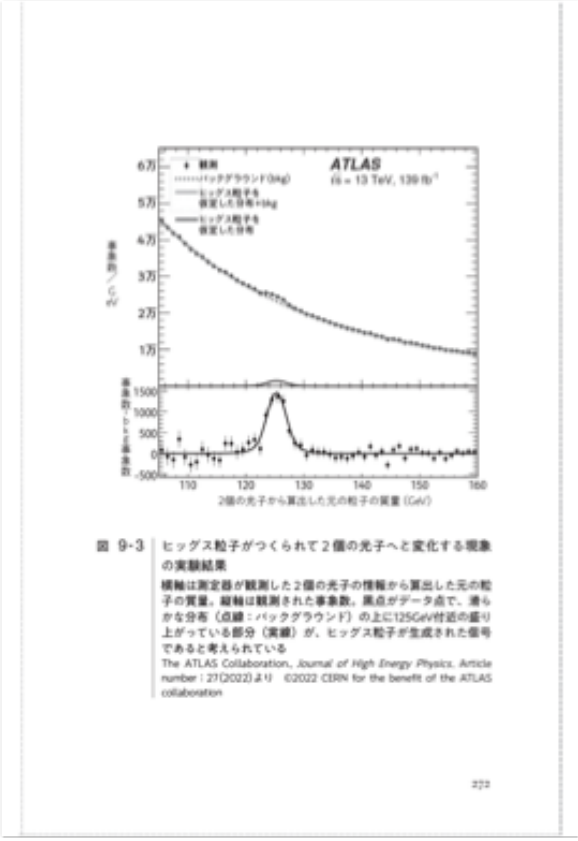

図 9-3 ヒッグス粒子がつくられて２個の光子へと変化する現象の実験結果

横軸は測定器が観測した２個の光子の情報から算出した元の粒子の質量、縦軸は観測された事象数。黒点がデータ点で、滑らかな分布（点線：バックグラウンド）の上に125GeV付近の盛り上がっている部分（実線）が、ヒッグス粒子が生成された信号であると考えられている

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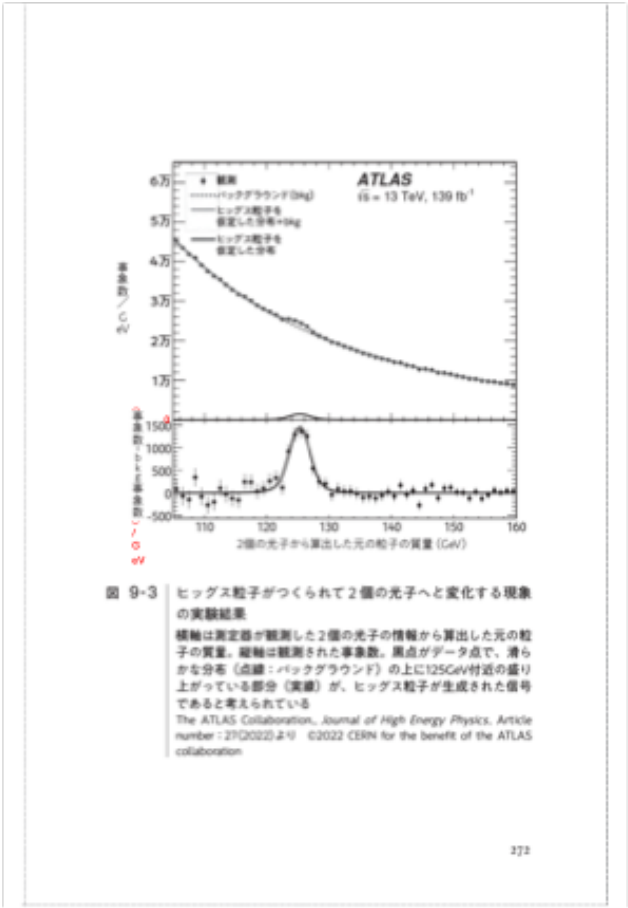
222

Fig.9-3_orignal



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372

Fig.9-3_revised

3. Page 15, Table of Contents for Chapter 3, second-to-last subheading:” Candidate celestial bodies where the r-process occurs: Supernova explosions and neutron mergers” ⇨”Candidate celestial bodies where the r-process occurs: Supernova explosions and neutron star mergers”

4. Page 119, subheading: “Candidate celestial bodies where the r-process occurs: Supernova explosions and neutron mergers” ⇨ “Candidate celestial bodies where the r-process occurs: Supernova explosions and neutron star mergers”

5. Page 308, third line from the bottom: "Error to consider, "⇨ "Considering the error,"

The following corrections, 6. to 18., pertain to index information.

6. Page 314, fourth line in the left column of index items, Multiverse Hypothesis: 301 ⇨ 299

7. Page 314, 24th line in the left column of index items, Quantum Fluctuations: 132 ⇨ 233

8. Page 315, sixth line in the right column of index items, Non-Perturbative Limit: 292 ⇨ 290

9. Page 316, 32nd line in the left column of index items, Dark Energy Problem: 262 ⇨ 261

10. Page 316, first line in the right column of index items, Dark Matter: 242 ⇨ 240

11. Page 316, sixth line in the right column of index items, Grand Unified Force: 287 ⇨ 285

12. Page 316, 22nd line in the right column of index items, Superconducting State: 287 ⇨ 285

13. Page 316, 22nd line in the right column of index items, Grand Unified Force: 287 ⇨ 285

14. Page 317, 23rd line in the left column of index items, Cosmological Constant Problem: 262 ⇨ 261

15. Page 318, 16th line in the right column of index items, J-PARK ⇨ J-PARC

16. Page 318, 22nd line in the right column of index items, LHC (Large Hadron Collider): 272 ⇨ 270

17. Page 318, 30th line in the right column of index items, r-process (rapid neutron capture process): 113⇨ 112

18. Page 318, 32nd line in the right column of index items, s-process (slow neutron capture process): 113⇨ 112

19. Page 9, second line: "European Organization for Nuclear Research" ⇨ "European Nuclear Research Organization"

20. Page 157, Line 1: "and its square is,"⇨ "and the square of its absolute value, which is proportional to the probability of existence, is,"

21. Page 157, Line 2: $z^2 = (a + ib)(a - ib) = a^2 + b^2$⇨ $|z|^2 = (a + ib)(a - ib) = a^2 + b^2$

22. Page 158, Line 6: $z^2 = r^2(\cos(\theta) + i \sin(\theta))^2 = r^2(\cos^2(\theta) + \sin^2(\theta)) = r^2$⇨ $|z|^2 = r^2|\cos(\theta) + i \sin(\theta)|^2 = r^2(\cos^2(\theta) + \sin^2(\theta)) = r^2$

23. Page 158, Line 7: "because z^2, which is the probability of the electron's position, does not change."⇨ "because $|z|^2$, which is proportional to the probability of the electron's position, does not change."

24. Page 269, Line 1: $\phi_1(x,y,z,t)$⇨ $\varphi_1(x,y,z,t)$

25. Page 269, Line 2: $\phi_2(x,y,z,t)$⇨ $\varphi_2(x,y,z,t)$

26. Same Page 269, Line 2: “the magnitude of energy, $(|\phi_1|,|\phi_2|)$”⇨ “the magnitude of energy, $(|\varphi_1|,|\varphi_2|)$”

27. Same Page 269, Line 4: “values of the field $(|\phi_1|,|\phi_2|)$for the complex Higgs fields ϕ_1 and ϕ_2”⇨ “values of the field$(|\varphi_1|,|\varphi_2|)$ for the complex Higgs fields φ_1 and φ_2”

July 29th, 2024

IPNS, KEK