

Neutrinos via Charm Decays in Astrophysical Sources

by

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Abstract

Abbreviations

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1 Introduction

first zeroth test.¹⁻³

second zeroth test.^{1,2}

third zeroth test^{1,3}

test.⁴

first test [1-3]

second test [1, 2]

third test [1, 3]

[5]

[4]

[6]

$(2.998 \pm 0.001) \times 10^{10} \text{ cm s}^{-1}$

$\pm \times + - \cdot 6.626 \times 10^{-27} \text{ erg s}$

$4.803 \times 10^{-10} \text{ esu}$

10^{14} G

$1.4 \times 10^0 \text{ } 1.4 \times 10^0$

$$\sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6} \tag{1}$$

$\sqrt{1-\beta^2}$

$\alpha\beta\gamma\delta\eta\zeta\zeta\chi\varphi\phi\vartheta\theta\mu\nu\rho$

2 Background

2.1 Particle Physics

2.2 Multimessenger Astronomy

2.3 Astrophysical Sources

Magnetars

Active Galactic Nuclei

3 Results

4 Conclusion & Outlook

Acknowledgements

Appendix

Bibliography

1. J. A. Carpio, K. Murase, M. H. Reno, I. Sarcevic, A. Stasto, *Physical Review D* **102**, ISSN: 2470-0029, DOI: [10.1103/PhysRevD.102.103001](https://doi.org/10.1103/PhysRevD.102.103001), arXiv: [2007.07945](https://arxiv.org/abs/2007.07945) [[astro-ph.HE](#)] (2020).
2. C. Alvarez, A. Carramiñana, *Astronomy & Astrophysics* **414**, 651–658, ISSN: 1432-0746, DOI: [10.1051/0004-6361:20031627](https://doi.org/10.1051/0004-6361:20031627), arXiv: [astro-ph/0311267](https://arxiv.org/abs/astro-ph/0311267) (2004).
3. J. D. Jackson, *Classical Electrodynamics* (Wiley, New York, NY, Third Edition, 1999), ISBN: 9780471309321.
4. J. Li, A. Spitkovsky, A. Tchekhovskoy, *The Astrophysical Journal* **746**, 60, DOI: [10.1088/0004-637X/746/1/60](https://doi.org/10.1088/0004-637X/746/1/60), arXiv: [1107.0979](https://arxiv.org/abs/1107.0979) [[astro-ph.HE](#)] (2012).
5. C. Thompson, R. C. Duncan, *The Astrophysical Journal* **408**, 194, DOI: [10.1086/172580](https://doi.org/10.1086/172580) (1993).
6. B. Haskell, A. Sedrakian, in *Astrophysics and Space Science Library* (Springer International Publishing, 2018), Chapter 8, 401–454, ISBN: 9783319976167, ISSN: 2214-7985, arXiv: [1709.10340](https://arxiv.org/abs/1709.10340) [[astro-ph.HE](#)].

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