

# Neutrinos via Charm Decays in Astrophysical Sources

by

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# Abstract

## Acknowledgements

## Abbreviations

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# 1 Introduction

## 1.1 Motivation

## 1.2 Organisation

## 2 Methods

$$\mu = \frac{BR^3}{2} \quad (2.1)$$

$$\dot{E} = -\frac{2\mu^2\omega^4\sin^2\chi}{3c^3} \quad (2.2)$$

$$\dot{E} = -\frac{\mu^2\omega^4(1+\sin^2\chi)}{c^3} \quad (2.3)$$

$$\tau \equiv -\frac{E}{\dot{E}} \quad (2.4)$$

$$I = \frac{2MR^2}{5} \quad (2.5)$$

$$E = \frac{I\omega^2}{2} \quad (2.6)$$

$$\dot{E} = \omega\dot{\omega} = K\omega^4 \quad (2.7)$$

$$I\dot{\omega} = K\omega^3 \quad (2.8)$$

$$I\omega^{-3}d\omega = Kdt \quad (2.9)$$

$$\omega^{-2} = \omega_0^{-2} - \frac{2Kt}{I} = \omega_0^{-2} \left(1 + \frac{t}{\tau}\right) \quad (2.10)$$

$$\tau = -\frac{I}{2K\omega^2} \quad (2.11)$$

$$\omega = \frac{\omega_0}{\sqrt{1 + \frac{t}{\tau}}} \quad (2.12)$$

## 3 Results



## 4 Discussion

# Appendix