# Neutrinos via Charm Decays in Astrophysical Sources

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# Abstract

# Acknowledgements

# Abbreviations

# Contents

# 1 Introduction

# 2 Methods

$$\mu = \frac{BR^3}{2} \tag{2.1}$$

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

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

$$\tau \equiv -\frac{E}{\dot{E}} \tag{2.4}$$

$$I = \frac{2MR^2}{5} \tag{2.5}$$

$$E = \frac{I\omega^2}{2} \tag{2.6}$$

$$\dot{E} = I\omega\dot{\omega} = K\omega^4 \tag{2.7}$$

$$I\dot{\omega} = K\omega^3 \tag{2.8}$$

$$I\omega^{-3}d\omega = Kdt \tag{2.9}$$

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

$$\tau = -\frac{I}{2K\omega^2} \tag{2.11}$$

$$\omega = \frac{\omega_0}{\sqrt{1 + \frac{t}{\tau}}} \tag{2.12}$$

# 3 Results

# 4 Discussion

# Appendix