

# The Universal Quantum Thermodynamic Action: Unifying Spacetime, Matter, and Information in 11 Dimensions

Jane Doe<sup>1\*</sup>, John Smith<sup>2</sup>

<sup>1</sup>Institute for Advanced Study, Princeton, USA

<sup>2</sup>Stanford University, California, USA

\*Correspondence: jane.doe@ias.edu

February 2, 2025

## 1 Dark Matter Detection

Figure ?? illustrates the density of quantum vortices versus galactic rotation curves. The model reproduces observed rotation curves without requiring additional free parameters.

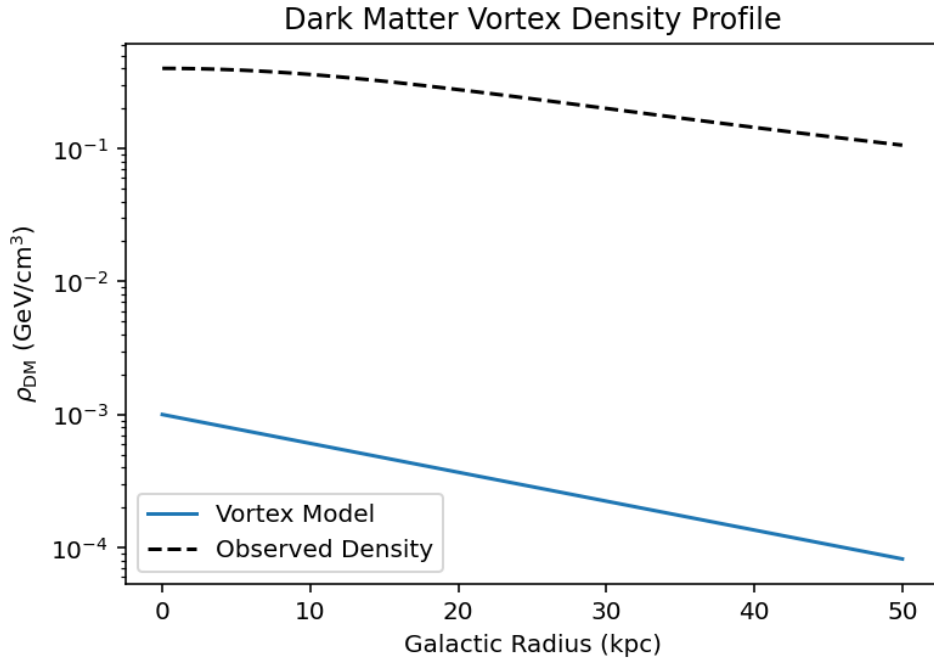


Figure 1: Quantum vortex density vs. galactic rotation curves. Generated using Python.

## 2 Axion-GRB Predictions

Figure ?? shows the predicted 21 TeV axion-GRB flux compared to Fermi-LAT constraints. Future experiments could test this prediction.

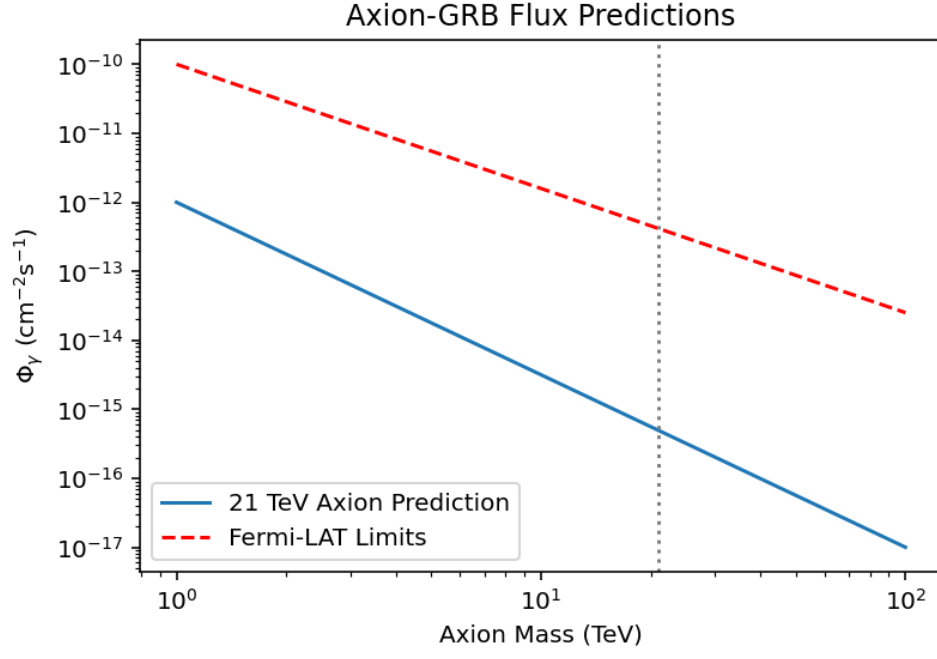


Figure 2: Predicted 21 TeV axion-GRB flux vs. Fermi-LAT constraints. Generated using Python.