

1 Leveraging Multi-Messenger Astrophysics for Dark 2 Matter Searches

3

4 June 22, 2023

5 **Abstract**

6 I did Dark Matter with HAWC and IceCube. I also used Graph Neural
7 Networks

8 **1 Acknowledgments**

9 I love my friends. Thanks to everyone that helped me figure this out. Kirsten,
10 Pat, Andrea Family. Roommate

11 **2 Introduction**

12 **2.1 HAWC**

13 **2.2 IceCube**

14 **3 Physics**

15 **3.1 Science Motivations Dark Matter**

16 **3.2 Combining data at the LLH level**

17 **3.3 The Glory Duck Project**

18 **3.4 The New Duck Project**

19 **4 CMSE**