

MEASURING SOLAR NEUTRINO FLUX IN THE SNO+ PURE SCINTILLATOR PHASE

Eric Marzec

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Supervisor of Dissertation

Graduate Group Chairperson

J.R. Klein

Professor, Physics and Astronomy

J.R. Klein

Professor, Physics and Astronomy

Dissertation Comittee:

Joe Kroll, Professor, Physics and Astronomy

Christopher Mauger, Professor, Physics and Astronomy

Justin Khoury, Professor, Physics and Astronomy

Doc 4, Professor, Physics and Astronomy

Doc 5, Professor, Physics and Astronomy

Doc 6, Professor, Physics and Astronomy

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I did it on my own. Get rekt suckas

Acknowledgements

I did this mostly on my own. Anyone else who helped did so in such an insignificant way that I've by now forgotten about it.

ABSTRACT

MEASURING SOLAR NEUTRINO FLUX IN THE SNO+ PURE SCINTILLATOR PHASE

Eric Marzec

J.R. Klein

Described here is a measurement of the solar neutrino flux as measured by SNO+.

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Chapter 1

Introduction

1.1 Neutrinos

Neutrinos are a spin- $\frac{1}{2}$ particles that are pretty cool.

1.1.1 Solar Neutrinos

1.1.2 Neutrino Oscillations

1.1.2.1 Vacuum Oscillations

1.1.2.2 The MSW Effect

1.1.3 Neutrino Experiments

1.1.3.1 Solar Experiments

1.1.3.2 Terrestrial Experiments

1.2 The SNO+ Detector

1.2.1 The Detector in Brief

It's a big ole ball of glowing goo

1.2.2 Electronics And DAQ

1.2.3 Scintillator

Its just magic.

1.3 Signal Extraction

1.3.1 Data Cleaning

1.3.1.1 CAEN Cut

1.3.1.2 Getting rid of flashers in scintillator

It was really EZ

1.4 Chameleons

1.5 Conclusion

Neutrinos don't even exist

Chapter 2

Conclusion

2.1 Wrapping up...

I rest my case.

Appendices

Appendix A

Some Appendix

A.1 first section

Appendix B

Another Appendix

Glossary

Roman Symbols

M Mass of object, page 7

Greek Symbols

τ Optical depth, page 7

Superscripts

^{*} Conjugate, page 7

Subscripts

\odot relating to the sun (Sol), page 7

Other Symbols

11HUGS 11 Mpc Halpha and Ultraviolet Galaxy
Survey, page 7

Acronyms

2MASS Two-Micron All Sky Sruvey, page 7

References