

# Summer Internship Project Report

## Detection of Cosmic Muons Using Gas Detectors

Submitted by

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Under the guidance of

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Summer Internship 2023

## Acknowledgements

I want to express my profound gratitude to Dr. Sanjib Buhuri, who has served as my mentor and an outstanding role model during this endeavour. I appreciate him allowing me the chance to work with him and guiding me as I discover new ideas and themes. When we talked, he didn't simply explain the subjects; he also taught me how to approach the ideas in a way that wasn't solely based on mathematical proofs. For giving me this chance and inspiring me to investigate, I would also like to thank the Experimental High Energy Group at the Variable Energy Cyclotron Centre, Kolkata, and the School of Physical Sciences at the National Institute of Science Education and Research.

# School Of Basic Sciences

INDIAN INSTITUTE OF TECHNOLOGY, MANDI

## *Certificate*

This is to certify that Mr. Anantha Padmanabhan, Student of National Institute of Science Education and Research, has successfully completed a summer internship in the field of Group Theory from 5/06/2023 to 29/07/2023 under the guidance of Dr.Sanjib Muhuri. We wish him every success in his life and career.

VECC Kolkata,  
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Sanjib Muhuri  
(Project Guide)

Date:

### **Abstract**

In this report we will discuss about the basics of the group theory and symmetries. The Group Theory is used as a mathematical frame work for describing symmetry properties of classical as well as quantum systems. We will also read about Homomorphisms- a structure-preserving map between two algebraic structures of the same type, Conjugations, and some applications of the Group theory in different fields like the crystallography and Topologies etc.

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# 1 Introduction

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## References

- [1] Shlomo Sternberg. *Group theory and physics*. Cambridge university press, 1995.