

Seminar Invitation: Construction and Topological Properties of a Novel Lie Group: Representations and Isomorphism with $SO(2, 1)$

Speaker: Abid Ali from Department of Mathematics, University of the Punjab, Lahore

Abstract

In this talk, we construct a novel Lie group and investigate its topological properties and representations. The construction process involves first creating a new metric tensor for a four-dimensional spherically symmetric space and then utilizing the Killing equation to determine its Killing vectors. These Killing vectors are obtained by solving a system of partial differential equations (PDEs). Using these Killing vectors, we construct a finite Lie algebra and prove that they form a Lie group corresponding to the Lie algebra. Furthermore, we prove that this Lie group is isomorphic to the group $SO(2,1)$, which is also known as the Lorentz group in $(2+1)$ dimensions. In the end, we also describe the Lie group's topological properties and representations.

Speakers' Brief Introduction

Mr. Abid Ali is an MPhil Scholar working under the supervision of Dr. Muhammad Khalid Mahmood. The field of research of a student is Pure Mathematics, specializing in Lie Groups.



Departmental Seminar Series

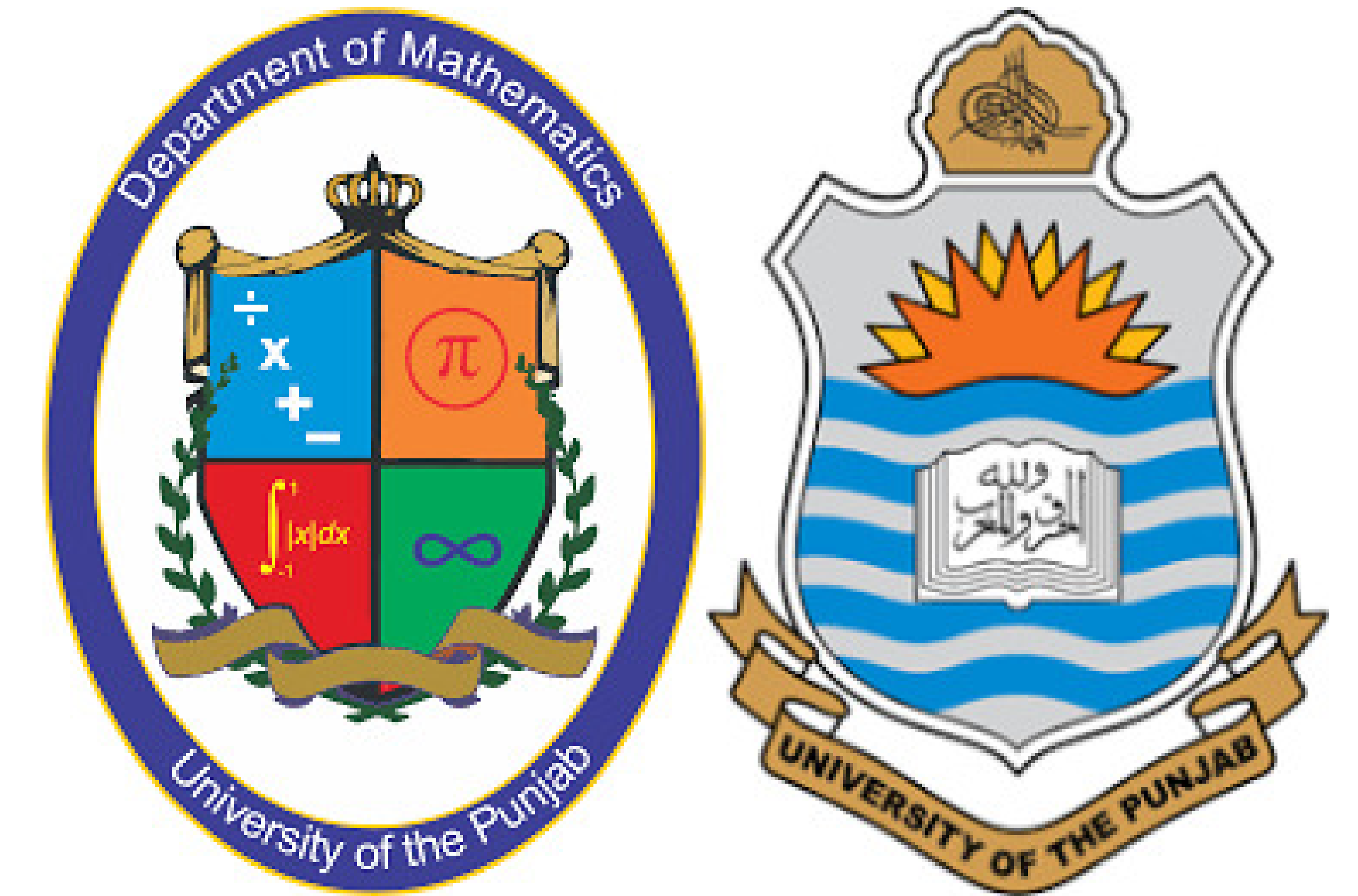
The Seminar Series serves as a platform to showcase and celebrate the remarkable work carried out by our researchers, scholars, and experts. It provides an avenue for knowledge dissemination, and collaboration, creating an environment that nurtures innovative ideas and drives groundbreaking research. We proudly acknowledge and celebrate the remarkable contribution of Prof. Dr. Muhammad Sharif in introducing this seminar series back in 2005. The Seminar Series encompasses a wide range of topics, spanning various disciplines, ensuring that it caters to the diverse interests and expertise of our institute's community. Through these seminars, we aim to cultivate an environment of intellectual curiosity, stimulating meaningful discussions, and fostering interdisciplinary collaborations.



Please join us for this Presentation

When: Thursday 6th July 2023; 02:00PM-02:15PM
Where: Computer Lab, Department of Mathematics, University of the Punjab, Lahore

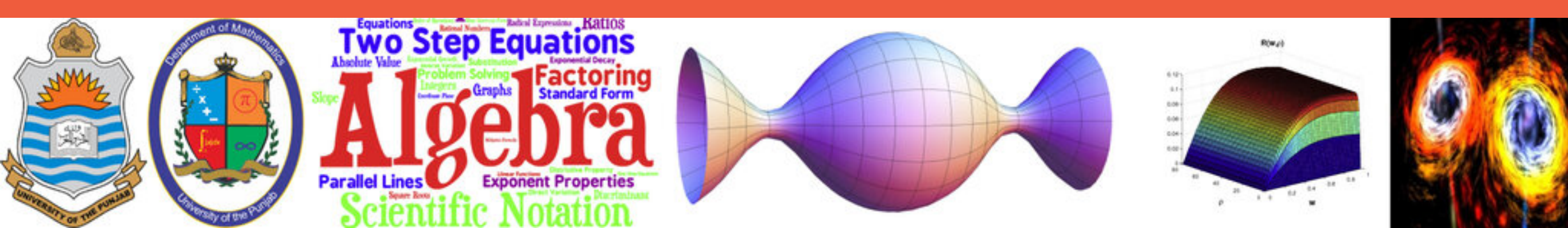
Chairman Message



It is my honor to witness the passion and dedication that our faculty and students bring to the study of this beautiful discipline. I encourage our faculty members to create a supportive environment that nurtures and promotes mathematical research. I urge each and every one of you, regardless of your level of experience, to actively participate in mathematical research and contribute to the growth of our research community. It is our collective responsibility to create an ecosystem that encourages and facilitates research pursuits.

Coordinator Departmental Seminar Series

Dr. Zeeshan Yousaf
Associate Professor
Department of Mathematics, University of the Punjab, Lahore



All the faculty members and research scholars (MPhil/PhD) are invited to the seminar

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