ICTS | INTERNATIONAL CENTRE for THEORETICAL SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Ph.D Thesis Defense Seminar

Title : On some aspects of Dijkgraaf-Witten theory for finite 2-groups

Speaker : Srikanth Pai B (ICTS – TIFR, Bengaluru)

Date : Wednesday, 29th November 2023

Time : 03:00 pm (IST)

Abstract : A d-dimensional extended TQFT is a symmetric monoidal 2-functor out of a symmetric monoidal bicategory (SMB) of d-bordisms. Following Freed-Hopkins-Lurie-Teleman, I will describe a framework for constructing the partition function Z of the Dijkgraaf-Witten (DW TQFT) theory that factors through an SMB of bispans.

A key result I will discuss is the characterisation of a 2-functor out of a bicategory of bispans. An example of such a 2-functor will be discussed. A DW TQFT can be constructed if a stronger statement involving a symmetric monoidal structure is found.

A finite 2-group X is a connected 2-type with finite homotopy groups. I will explicitly describe the path groupoid of the derived mapping space of maps from a 2-sphere to X. Assuming the DW TQFT exists, I will explain the relation between mapping spaces and the TQFT. The value of a 3-dimensional theory Z on a 2-sphere will follow.

Venue : **Offline:** Obaid Siddiqi Meeting Room

Online: Please click on the below link to join the talk

https://zoom.us/j/92555618587?pwd=TjRPQXZTcWRBUWVKUE0yaHpGNFpvdz09

Meeting ID: 925 5561 8587

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