

Mathematical Physics seminar

Thursday, Sep 2, 2021

10:30 am-11:30 am

UNIV 319 and on Zoom; link will be provided on

<https://www.math.purdue.edu/~ebkaufma/seminar>

Speaker: Arun Debray, Math Dept., Purdue

Title: Topological phases and topological field theories

Abstract: It is generally believed that the low-energy effective theory of a topological phase of matter is a topological field theory (TFT), providing an avenue for mathematical work in TFT to address questions in condensed-matter physics. However, making this belief precise is a difficult open problem. In this talk, I'll describe what we do know about this correspondence between topological phases and TFTs, delving into the easier invertible case as well as my work on a particular example in the noninvertible case. With the remaining time, I'll discuss a potential next step of understanding this correspondence for phases with spatial symmetries.