

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

MODULI SPACES OF PRINCIPAL 2-GROUP BUNDLES AND A CATEGORIFICATION OF THE FREED–QUINN LINE BUNDLE

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Dec 1, 2022, 4-5pm
Zoom link:

<https://bostonu.zoom.us/j/93731959866?pwd=b2JaWTE1TkRPdEpXRXk0M1pPQkIzdz09>
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Abstract: A 2-group is a higher categorical analogue of a group, while a smooth 2-group is a higher categorical analogue of a Lie group. An important example is the string 2-group, defined by Schommer-Pries. We study the notion of principal bundles for smooth 2-groups, and investigate the moduli "space" of such objects.

In particular in the case of flat principal bundles for a finite 2-group over a Riemann surface, we prove that the moduli space gives a categorification of the Freed–Quinn line bundle. This line bundle has as its global sections the state space of Chern–Simons theory for the underlying finite group. We can also use our results to better understand the notion of geometric string structures (as previously studied by Waldorf and Stolz–Teichner).

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin (yslin@bu.edu) or Siu-Cheong Lau (lau@math.bu.edu) for more information.