

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

## ABELIAN 3D DUALITIES

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CCDS 365, Feb 14, 2024, 4-5pm

Tea: 3:45pm in Room 365

**Abstract:** A symplectic algebraic space is expected to determine a pair of 3-dimensional topological quantum field theories, the 3d A- and B-models; the 3d mirror symmetry program conjectures that these theories (hence also symplectic spaces) arise in dual pairs. If the space admits a Hamiltonian  $G$ -action, these theories become boundary conditions for 4-dimensional  $G$ -gauge theory, and 3d mirror symmetry lives at the boundary of Langlands duality, a phenomenon underlying the proposed "periods– $L$ -functions" duality of Ben-Zvi–Sakellaridis–Venkatesh. On the other hand, mirror 3d theories also admit interesting decategorifications and dual boundary conditions. We will describe several aspects of this story in the case of abelian gauge groups. This is based on joint works with Aaron Mazel-Gee and Justin Hilburn.

See <http://math.bu.edu/research/geom/seminar.html> or contact Yu-Shen Lin ([yslin@bu.edu](mailto:yslin@bu.edu)) or Brian Williams ([bwill22@bu.edu](mailto:bwill22@bu.edu)) for more information.