

BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

AFFINE BPS LIE ALGEBRAS AND W ALGEBRAS

Ben Davison
University of Edinburgh

MCS B31, Oct 26, 2022, 4-5pm

Tea: 3:45pm in Room B24

Abstract: In this talk I will, in stages, build (half) of the affine Yangian of $\mathfrak{gl}(1)$, a certain deformation of the universal enveloping algebra of differential forms on the torus, out of cohomological Hall algebras and BPS Lie algebras. These are certain Lie algebras generating Kontsevich-Soibelman Hall algebras associated to quivers with potential, and the first step is to affinize (a certain class of) them, using dimensional reduction and factorization structures over \mathbb{A}^1 . Along the way I will prove spherical generation of the instanton Hall algebra considered by Schiffmann and Vasserot in their proof of the AGT conjectures, aka the algebra of all possible raising operators on $\text{Hilb}(\mathbb{A}^2)$ and in fact fully determine this algebra along with various of its deformations.

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