BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

THE LOG KAZHDAN–LUSZTIG CORRESPONDENCE

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Zoom link:
https://bostonu.zoom.us/j/95284407549?pwd=OW1ZSy9FZzErcmwzR3NPT0VhWmtmQT09
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Abstract: A landmark discovery of the 1980s, due to many mathematicians and physicists (Drinfeld, Kohno, Witten, etc.), was the close relationship between quantum groups and affine Lie algebras. Kazhdan–Lusztig established a sharp form of this in representation theory via an equivalence of braided tensor categories of modules. The subtlest cases of their result occur when the quantum parameter q is a root of unity, where one has to pick the right form of the quantum group (the so-called Lusztig, or divided-powers form) in order for the equivalence to hold. In the mid-2000s, Feigin–Gainutdinov–Semikhatov–Tipunin conjectured a similar 'log Kazhdan–Lusztig correspondence' between representations of another version of the quantum group, the small quantum group, and a vertex algebra known as the triplet, at certain roots of unity. After providing a survey of these influential works for non-specialists, we will propose a conjecture extending that of Feigin et. al. to all roots of unity. Time permitting, we will indicate a way to prove it conditional on some foundational conjectures in quantum geometric Langlands.

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.