Mathematics Colloquium

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Categorification of representations and generalized affine Grassmannian slices

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Abstract. The geometric Satake correspondence links representations of a semisimple group with the geometry of the affine Grassmannian. From this perspective, it is natural to try to categorify representations using quantizations of affine Grassmannian slices. Remarkably these affine Grassmannian slices also appear in physics as Coulomb branches of 3d supersymmetric gauge theories. This connection allows us to generalize affine Grassmannian slices and achieve the desired categorification.