Contribution ID: **10** Type: **not specified**

8/14 [Xiuping Su] Categorification and the quantum Grassmannian

Let CM(A) be the category of Cohen-Macaulay modules of a certain Gorenstein order. Equivalently,

CM(A) is a category of equivariant Cohen-Macaulay modules for the plane curve singularity $x^k = y^{n-k}$

This category provides an (additive) categorification for the Grassmannian cluster algebra $\mathbb{C}[\mathrm{Gr}(k,n)]$.

In this talk, I will define an invariant $\kappa(M,N)$ for $M, N \in \mathrm{CM}(A)$ and discuss its properties. I will then explain

how to use this invariant to construct quantum seed data and its link to Newton-Okounkov bodies constructed by Rietsch-Williams.
The quantum seed is compatible with mutations and it determines a quantum cluster algebra, which is isomorphic to the quantum Grassmannian.
This talk is based on joint work with B T Jensen and A King.