

Coloured mutation of coloured quivers of type $\mathbb{A}_n$ and $\mathbb{D}_n$

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In this talk we will define the coloured mutation of coloured quivers. Coloured quivers and its respective mutation were introduced by Buan and Thomas in his work [1]. This generalizes the well known quiver mutation of Fomin and Zelevinsky [2]. A colored quiver Q is a finite quiver whose arrows are associated with a color c in $\{0, \dots, m\}$, and satisfies the following properties: Q has no loops, and it adheres to two additional properties called monochromaticity and skew-symmetry. Every acyclic quiver Q can be viewed as a colored quiver by coloring each arrow with color 0 and adding an arrow of color m in the opposite direction. Buan and Thomas also defined an operation on the set of colored quivers called colored mutation, such that when there is only one color ($m = 1$), colored mutation coincides with the mutation defined by Fomin and Zelevinsky. The aim of this talk is to describe in a purely combinatorial manner the class of colored quivers that arise from mutating a quiver of type $\mathbb{A}_n$ or $\mathbb{D}_n$. This work is a collaboration with Rafael Parra and Claudio Qureshi. References:

References

- [1] A. Buan, H. Thomas, *Coloured quiver mutation for higher cluster categories*. Adv. Math. 222(3):971-995, 2009.
- [2] S. Fomin, A. Zelevinsky, *Cluster algebras I: Foundations*, J. Amer. Math. Soc. 15 (2): 497-529, 2002.

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