

CLUSTER CHARACTER IDENTITIES FOR UNIPOTENT CELLS

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In previous work we categorified the canonical cluster algebra structure on the coordinate ring of each unipotent cell by a 2-Calabi-Yau Frobenius subcategory of the modules over the corresponding preprojective algebra. An essential ingredient of this project is our cluster character which actually takes values in the coordinate ring. We show here, that the Fu-Keller cluster character can be used to provide a “cluster expansion formula” for our cluster character with respect to any cluster. An easy consequence is, that the twist automorphism of a unipotent cell is categorified in a strong sense by the inverse of the Auslander-Reiten translate. As an other application we show, in generalization of a conjecture of Dupont, that a properly defined “generic basis” of a quiver potential coming from a unipotent cell can be identified with the dual semicanonical basis.