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THE HOMOLOGICAL HEARTH OF A QUIVER AND THE FINITISTIC DIMENSION

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ABSTRACT. This talk is based on a joint work with Edward L. Green.

Let $\mathcal{Q}$ be a quiver and K a field. We study the interrelationship of homological properties of algebras associated to convex subquivers of $\mathcal{Q}$ and quotients of the path algebra $K\mathcal{Q}$. We introduce the homological heart of $\mathcal{Q}$ which is a particularly nice convex subquiver of $\mathcal{Q}$. For any algebra of the form $K\mathcal{Q}/I$, the algebra associated to $K\mathcal{Q}/I$ and the homological heart have similar homological properties. We give an application showing that the finitistic dimension conjecture need only be proved for algebras which are path connected quivers.