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Some Jordan recoverable subcategories of modules over gentle algebras.

Gentle algebras form a class of finite dimensional algebras introduced by Assem and Skowronski in the '80s. Modules over such an algebra can be described by string and band combinatorics, which are some kind of walk in the associated gentle quiver, thanks to the works of Butler and Ringel. A subcategory $\mathcal{C}$ of modules is said to be Jordan recoverable if we can recover (up to isomorphism) a representation X in $\mathcal{C}$ from the Jordan form of its generic nilpotent endomorphisms, called the generic Jordan form data of X.

The main aim of the talk is to explain the notion of Jordan recoverability through various examples and to highlight a combinatorial characterization of that property for some special kind of subcategories of modules over gentle algebras - a result which extends the work of Garver, Patrias, and Thomas done in Dynkin cases. If time allows it, we could discuss some open questions related to this result.

This is a part of my Ph.D. work supervised by Hugh Thomas.