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Representation theory of poset quivers

This is a work in progress with Job. D. Rock and Emine Yildirim. Given a quiver Q (possibly infinite), we replace each arrow by a linearly ordered set to get an object that we call poset quiver. This gives rise to the path category of this poset quiver. We can take the quotient of this category by an (weakly admissible) ideal, and consider the pointwise-finite representations (or modules) over this. Using Crawley-Boevey decomposition theorem for representations of linearly ordered sets (barcode decomposition), we see how the representation theory in this setting is controlled by the interval modules together with representations of some associated quivers to Q. We further study some homological properties in this setting, in particular how to construct the projective modules, and get new hereditary categories.