Quivers, their representations and quantum groups

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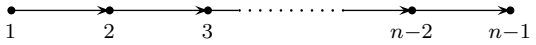
A graph consists of vertices and edges. If the edges of a graph are replaced by arrows, we obtain a directed graph (or *a quiver*). A *representation* of a quiver is a collection of finite dimensional vector spaces indexed by the vertices together with a collection of linear transformations indexed by the arrows. When a quiver is a so-called Dynkin quiver, its representations can be easily classified. I will use the following linear quiver



as example to classify all its representations. In the last few minutes, I will outline how quantum groups are constructed from quiver representations.