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Quivers and Higgs bundles

Quiver representations may be used to construct a large class of holomorphic Poisson varieties. We show that varieties associated to star-shaped quivers may be mapped into Hitchin systems over $\mathbf{P}^1$, giving them the structure of algebraic completely integrable systems. In the case of rank 2 bundles, this gives an interesting relationship between Hitchin systems and the moduli space of polygons in $\mathbf{R}^3$. This is based on joint work with Steven Rayan.