1135-55-2505   **Killian F. Meehan*** (`kfmb88@mail.missouri.edu`) and **David C. Meyer**. *Persistence and stability for the quiver* $\mathbb{A}_n$. Preliminary report.

Persistent homology uses generalized persistence modules to discern the topological properties of a finite data set. One typically endows the collection of generalized persistence modules with two different metric structures and proves an algebraic stability theorem showing that the identity function is a contraction or an isometry. When a persistence module comes from data, it admits the structure of a representation of a finite, totally ordered set whose Hasse quiver will be an equioriented $\mathbb{A}_n$ quiver. Since any orientation of the $\mathbb{A}_n$ quiver in fact corresponds to the Hasse quiver of some finite poset, it is natural to wonder whether one can prove a stability theorem for these posets. We compare various metrics in this setting. (Received September 26, 2017)