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A geometric model for the non-τ-rigid modules of type $\widetilde{D}_n$

We give a geometric model for the non-τ-rigid modules over acyclic path algebras of type $\widetilde{D}_n$. Similar models have been provided for module categories over path algebras of types A_n, D_n, and $\widetilde{A}_n$ as well as the τ-rigid modules of type $\widetilde{D}_n$. A major draw of these geometric models is the "intersection-dimension formulas" they often come with. These formulas give an equality between the intersection number of the curves representing the modules in the geometric model and the dimension of the extension spaces between the two modules. Essentially, this formula allows us to calculate the homological data between two modules combinatorially. Since there are infinitely many distinct homogenous stable tubes in the regular component of the Auslander-Reiten quiver of type $\widetilde{D}_n$, all of which are disjoint, our geometric data requires an extra decoration on the admissible tagged edges in our geometric model to prevent intersections between curves corresponding to modules in distinct connected components of the Auslander-Reiten quiver.