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Strict intervals in monoidal categories

By a *strict interval* I in a monoidal category $\mathcal{E}$ we mean a cocategory object such that the object of coobjects is the tensor unit. For example, the free category $\mathbf{2}$ on the graph with two distinct vertices and a single edge between them is (the object of coarrows of) a strict interval with respect to the cartesian monoidal structure on the category $\mathbf{Cat}$ of small categories, and it is well-known that the familiar 2-category structure on $\mathbf{Cat}$ is induced by this strict interval. In general, when $\mathcal{E}$ possesses a strict interval I and suitable additional structure, there is an induced 2-category structure on $\mathcal{E}$ and it is possible to say a good deal about this 2-category structure on the basis of simply examining the properties of I itself. For instance, we can characterize completely those I which induce on $\mathcal{E}$ a finitely bicomplete 2-category structure. In this talk we will describe these and related facts regarding the 2-categorical and homotopy theoretic properties of monoidal categories $\mathcal{E}$ which possess a strict interval.