Functors between higher cluster categories of type A

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Isomorphism classes of indecomposable objects in the m-cluster category $\mathcal{C}^m(A_l)$ of type A_l are in bijection with so-called m-diagonals in a polygon P_N with $N = m(l+1)+2$ corners (Baur–Marsh 2008). When $m/m' = (l+1)/(l'+1) \in \mathbb{N}$, this gives rise to an injective map from the set of isomorphism classes of objects in $\mathcal{C}^{m'}(A_{l'})$ to the set of isomorphism classes of objects in $\mathcal{C}^m(A_l)$.

In the talk, we shall see that this embedding of objects comes from a functor between the two cluster categories. While the functor in question is not full and faithful, it factors as a full and faithful functor composed with a covering of $\mathcal{C}^m(A_l)$.