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## Kevin Walker: Categorized idempotent completion, topological symmetries of QFTs, and generalized Kramers-Wannier duality

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Any (n-pivotal) n-category  $C$  can be embedded in a Morita-equivalent completion  $C^\#$ . Because of the Morita equivalence, any module/action of  $C$  automatically leads to one of the larger category  $C^\#$ . In particular, discrete  $k$ -form symmetries of  $d$ -dimensional QFTs correspond to actions of  $C(G, d+1, k+1) = \pi_{\leq d+1}(B^{k+1}(G))$ , and therefore give rise to actions of the completed  $(d+1)$ -category  $C(G, d+1, k+1)^\#$ . While  $C(G, d+1, k+1)$  is built out of invertible morphisms,  $C(G, d+1, k+1)^\#$  typically contains many non-invertible morphisms leading to non-invertible symmetries of the original QFT. I'll also discuss how completed n-categories can be used to construct many new examples of Kramers-Wannier-type dualities. This is joint work with Fiona Burnell.