Abelian Sheaves and Picard Stacks

In SGA4 Exposé XVIII, Deligne studies the relation between 2-category of Picard stacks and bicategory of length 2 complexes of abelian sheaves. We will look at this relation and see how it can be generalized to 3-category of Picard 2-stacks and tricategory of length 3 complexes of abelian sheaves.