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Our work is motivated by a recent interesting result by Zheng and Huang which asserts that for “many” rings R (more precisely, R should be left and right noetherian with a dualizing complex) the categories $\underline{\text{GProj}}(R)$ and $\underline{\text{GInj}}(R)$ are triangulated equivalent. The stable categories $\underline{\text{GProj}}(R)$ and $\underline{\text{GInj}}(R)$ can be realized as the homotopy category of certain model categories (for instance the Frobenius model categories $\text{GProj}(R)$ and $\text{GInj}(R)$). So it is natural to ask when the triangulated equivalence between $\underline{\text{GProj}}(R)$ and $\underline{\text{GInj}}(R)$ is, in addition, a derived equivalence (i.e. induced from a Quillen equivalence of model categories). In the talk we will consider the following more general question:

For which abelian categories \mathcal{A} (assumed to be bicomplete with enough projectives and enough injectives) are the categories $\underline{\text{GProj}}(\mathcal{A})$ and $\underline{\text{GInj}}(\mathcal{A})$ derived equivalent?. We will give sufficient conditions to ensure this and for such cases we will construct new examples for some abelian categories \mathcal{B} naturally constructed from \mathcal{A} . (Received August 23, 2016)