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This is a report on joint work with Luise Unger.

Let  $\Lambda$  be a piecewise hereditary algebra over an algebraically closed field  $k$ . By definition there exists a hereditary abelian  $k$ -category  $\mathcal{H}$  such that bounded derived categories  $D^b(\Lambda)$  and  $D^b(\mathcal{H})$  are equivalent as triangulated categories. The aim of this talk is to explain that the representation dimension  $\text{rep.dim}\Lambda \leq 3$  for a piecewise hereditary algebra  $\Lambda$ . We will first recall some necessary results on piecewise hereditary algebras and on the representation dimension of an arbitrary finite dimensional  $k$ -algebra  $\Lambda$ . Then we will sketch the main ingredients of the result mentioned above. (Received May 13, 2010)