Why many modules have a functorial tilting or cotilting behavior?

 $GABRIELLA \ D \ Este^1 < \texttt{gabriella.deste@mat.unimi.it} >$

1

We investigate the big gap - from the functorial point of view - between very special modules, that is selforthogonal modules, big enough to satisfy a Hom - Ext condition verified by tilting or cotilting modules. By replacing modules with projective or injective dimension at most one, with modules with (finite)projective or injective dimension at least two, the following facts show up: - The property of being faithful vanishes.

- The property of being faithful vanishes.

- The relationship between the number of (pairwise non isomorphic) simple modules and the number of (pairwise non isopmorphic) indecomposable summands of a tilting or cotilting - type module vanishes.

L

¹University of Milano