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## Tilting and localization

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The  $\mathbb{Z}$ -module  $\mathbb{Q} \oplus \mathbb{Q}/\mathbb{Z}$  is a typical example of a (large) tilting module. Following the same pattern, one can construct tilting modules in many situations. How general is this construction of tilting modules via localization? What kind of tilting modules does one obtain in this way?

We discuss these questions by investigating recollements of the derived category  $D(\text{Mod } R)$  of a ring  $R$ . Indeed, every tilting module of projective dimension one gives rise to such a recollement. On the other hand, recollements can be used to construct tilting objects in  $D(\text{Mod } R)$ . We will see that over certain rings this approach leads to a complete classification of all tilting modules.

The talk relies on joint work with Maria Archetti, Steffen König, Qunhua Liu, Javier Sánchez.