FROM m-CLUSTERS TO m-NON-CROSSING PARTITIONS VIA EXCEPTIONAL SEQUENCES

This is joint work with Idun Reiten and Hugh Thomas.

We define $\mathrm{Hom}_{\leq 0}$-configurations and m-$\mathrm{Hom}_{\leq 0}$-configurations in the derived category of an hereditary algebra. We show a bijection between the set of silting objects and the set of $\mathrm{Hom}_{\leq 0}$-configurations. The bijection specializes to a bijection between m-cluster tilting objects and m-$\mathrm{Hom}_{\leq 0}$-configurations.

The idea of the proof of this bijection will be explained, it involves mutation of exceptional sequences in the derived category.

This result has a combinatorial motivation and interpretation: In the Dynkin case, it gives a bijection between the set of m-non-crossing partitions and the set of m-clusters.