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Cluster tilted algebras with cyclically oriented quiver

In this talk we study cluster-tilted algebras whose quiver is cyclically oriented. In this case an explicit description of the defining relations is given. For this kind of algebras, it is also shown that there exists an admissible cut and moreover that each arrow of the quiver is contained in an admissible cut. Furthermore, we show that if the endomorphism ring of an algebra of global dimension two over its cluster category, in the sense of Amiot, is cluster-tilted and has a cyclically oriented quiver, then the original algebra is a quotient by an admissible cut. In the case of cluster tilted algebras of Dynkin or extended Dynkin type, the connection is stronger and also the converse statement holds. Even more, in that case the original algebra is derived equivalent to the hereditary algebra.

Joint work with Michael Barot.