Conférence
« ARTA III : Avancées en théorie des représentations des algèbres »
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Surface algebras

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Given a triangulation of a surface with boundary and marked points one can define an algebra $B = kQ/I$ whose quiver reflects the adjacency of the arcs in the triangulation and whose relations are determined by a potential. The Auslander—Reiten quiver of the algebra B can be constructed from the surface by a simple combinatorial algorithm. Examples of these algebras are the cluster-tilted algebras of Dynkin type A. More generally one can consider surfaces with cuts. Cutting a surface modifies the adjacency of the arcs in the triangulation, which corresponds to removing arrows from the quiver. In this way, one can construct a class of algebras, called surface algebras. For example, the tilted algebras of type A are obtained in this way. In this talk, we explain the relations of these surface algebras with the original algebra B and show how the Auslander—Reiten quiver of a surface algebra can be constructed geometrically.

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