Surfaces with involutions and skew-group A_∞ categories

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Abstract: The combinatorics of triangulations and dissections of surfaces are closely related to subjects such as cluster algebras (for triangulations) and derived categories of gentle algebras (for dissections). The latter case can be studied by means of the topological Fukaya category defined by Haiden, Katzarkov and Kontsevich, which provides an "A_∞ enhancement" of gentle algebras.

In this talk, we will look at the case of a surface with an involution, whose quotient is a surface with orbifold points. We will see how algebraic constructions of "skew-group algebras" can be extended to the A_∞ setting. As an application, we will give a representation-theoretical interpretation of the "tagged arcs" which appeared both in the study of cluster algebras and skew-gentle algebras from surfaces. This is a joint work with Claire Amiot.