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*Triangulations, triangulated surfaces  
and the multiplicative structure of internal groupoids*

A triangulation [1] is a straightforward generalization of a directed graph. In the same way as a directed graph, internal to an arbitrary category, consists of two objects and two parallel morphisms between them, a triangulation consists of two objects (the object of triangles and the object of vertices) and three parallel morphisms between the two objects.

Every triangulated surface gives rise to a collection of triangles and hence a triangulation. Another example of a triangulation is obtained from the multiplicative structure of an internal groupoid, or an internal category.

In this talk we will see how to detect whether a given triangulation is the structure of a triangulated surface or the structure of an internal groupoid.

REFERENCES:

- [1] N. Martins-Ferreira, *On the structure of a triangulation*, Scripta-Ingenia 5 (December) (2015) 22–23.

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