1151-05-283 **Emanuele Delucchi*** (`emanuele.delucchi@unifr.ch`), Chemin du musée 23, 1700 Fribourg, Switzerland. *Topological dissections and algebraic combinatorics.*

In the early Seventies, Zaslavsky's work drew a powerful connection between matroid theory and arrangements of hyperplanes. Recently, different algebraic-combinatorial notions have been put forward in order to describe some algebro-combinatorial aspects of "abelian arrangements" (a class that includes arrangements in tori and elliptic curves as well as the classical case of hyperplanes). Zaslavsky's early general work on topological dissections perfectly fits this new context and indeed sheds some light on what are the "right" combinatorial objects to consider. In this context, a main open problem is to devise a matroidal theory for this enlarged context that encompasses the algebraic-combinatorial as well as the combinatorial-geometric side.

I will define abelian arrangements, illustrate the connection with Zaslavsky's theory of topological dissections, and suggest an approach to the aforementioned open problem that is based on the study of group actions on posets. (Received August 20, 2019)