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Emanuele Delucchi*, Chemin du Musée 21, 1700 Fribourg, Switzerland. *Oriented matroids and toric arrangements.*

Oriented matroids offer a powerful tool for the study of hyperplane arrangements in real vector spaces. In fact, via the structure theory of covectors and the Topological Representation Theorem, oriented matroids can be seen as abstract descriptions of the cellularization of a sphere by an arrangement of codimension-1 pseudospheres.

A recent switch of gears in the theory of arrangements brought into focus cellularizations of the (compact) torus by certain codimension-1 subtori. A natural, and still open question, is to give an axiomatic description of this cellularization as a part of (or as an inspiration for) an oriented-matroidal theory that works in the “toric” context. I will survey some work on this problem that has appeared in the literature, and I will propose an approach based on group actions on affine oriented matroids. (Received August 19, 2019)