

1121-05-75

Jose Alejandro Samper* (jasamper88@gmail.com), 121 South Main Street, 11th Floor,
Providence, RI 02903. *Matroid polytopes and shifted simplicial complexes.*

Matroid independence complexes and pure shifted simplicial complexes are two remarkable classes of simplicial complexes with similar structural properties. However, there is no common explanation for those remarkable similarities. The goal of this talk is to propose a way to study both classes from a geometric perspective that tries to unify them: the facet polytopes. We will see that shifted complexes almost satisfy various matroid defining axioms and explain how the geometry of the polytopes see these phenomena. We then explain how to use this as a tool in matroid theory. (Received July 11, 2016)