1151-05-130   **Spencer Backman**, **Emeric Gioan**, **Francisco Santos** and **Chi Ho Yuen***
(`chi.yuen@math.unibe.ch`). *Two results related to the enumeration of bases.*

I will present two results revolving the theorem of Las Vergnas and Gioan, which states that the number of activity classes is equal to the number of bases for an oriented matroid. The first result is a new proof of the theorem via an explicit, oriented matroid programming based bijection between bases and special orientations; the bijection can be applied in other settings and is of its own interest. The second result is a new characterization of regular matroids using circuit-cocircuit reversal system. These are joint works with Spencer Backman and Francisco Santos, and with Emeric Gioan, respectively. (Received August 15, 2019)