

1154-58-266

Corey Shanbrom* (corey.shanbrom@csus.edu). *A survey of the monster tower.*

Prolonging the plane with its tangent bundle yields a tower of manifolds equipped with rank 2 Goursat distributions. In 2001, Montgomery and Zhitomirskii showed that the germ of every Goursat flag appears within this tower, which they called the *monster tower*. Subsequent investigations analyzed orbits of symmetry group actions, the natural correspondence between points of the tower and prolongations of plane curves, and generalizations to higher base dimensions.

The monster tower has also been studied by algebraic and enumerative geometers who know it as the Semple tower, the compactification of a space of curvilinear data. Moreover, it appears in control theory as the configuration space for the kinematic model of a truck pulling many trailers. Here, we survey the literature on this ubiquitous object and describe an ongoing project which aims to unify the existing approaches. (Received August 27, 2019)