1145-47-329 **Grigoriy Blekherman** and **Lawrence Fialkow*** (fialkowl@newpaltz.edu). *The core variety and representing measures in the truncated moment problem.*

The classical Truncated Moment Problem asks for necessary and sufficient conditions so that a linear functional L on $\mathcal{P}_d$, the vector space of real n-variable polynomials of degree at most d, can be written as integration with respect to a positive Borel measure μ on $\mathbb{R}^n$. We work in a more general setting, where L is a linear functional acting on a finite dimensional vector space V of Borel-measurable functions defined on a T_1 topological space S. Using an iterative geometric construction, we associate to L a subset of S called the *core variety*, $CV(L)$. The main result is that L has a representing measure μ if and only if $CV(L)$ is nonempty. In this case, L has a finitely atomic representing measure , and the union of supports of all such measures is precisely $CV(L)$. We also prove a version of the Truncated Riesz-Haviland Theorem in this general setting, and use this to solve the generalized Truncated Moment Problem in terms of positive extensions of L. These results are adapted to derive a Riesz-Haviland Theorem for a generalized Full Moment Problem and to obtain a core variety theorem for the latter problem. (Received September 01, 2018)