1167-17-245   **Dimitar Grantcharov** and **Vera Serganova***, Department of Mathematics, UC Berkeley, Berkeley, CA 94720. *Weight modules over Lie algebras of polynomial vector fields.*

Let $W(n)$ denote the infinite-dimensional Lie algebra of vector fields on the affiine space A^n, it has a maximal toral subalgebra T. We present classification of simple $W(n)$-modules semisimple over T with finite weight multiplicities. In particular, we show that all these modules can be described geometrically as generalized tensor modules (introduced independently by Larsson and Shen). The result is based on previous results of Mathieu and Xue-Lu and the main tool is parabolic induction. (Received March 08, 2021)