Andrew Cavaness* (andrew.cavaness@mavs.uta.edu) and Dimitar Grantcharov. Bounded weight modules of the Lie algebra of vector fields on the affine space. Preliminary report.

In this talk we will discuss weight modules of the Lie algebra $W_2$ of vector fields on $\mathbb{C}^2$. A classification of all simple weight modules of $W_2$ with a uniformly bounded set of weight multiplicities is provided. To achieve this classification we introduce a new family of generalized tensor $W_n$-modules. This is a joint work with D. Grantcharov. (Received January 16, 2017)