1117-17-72 **Brian D. Boe***, Department of Mathematics, University of Georgia, Athens, GA 30602, and **Christopher M. Drupieski**, **Tiago R. Macedo** and **Daniel K. Nakano**. *Extensions for Generalized Current Algebras.* Preliminary report.

Given a complex semisimple Lie algebra $\mathfrak{g}$ and a commutative $\mathbb{C}$-algebra A, let $\mathfrak{g}[A] = \mathfrak{g} \otimes A$ be the corresponding generalized current algebra. In this talk we explore questions involving the finite-dimensionality and computation of extension groups for finite-dimensional $\mathfrak{g}[A]$-modules. Formulas for computing Ext^1 and Ext^2 between simple $\mathfrak{g}[A]$-modules are presented. As an application of these methods, we completely describe $\mathrm{Ext}^2_{\mathfrak{g}[A]}(L_1, L_2)$ for $\mathfrak{g} = \mathfrak{sl}_2$ and $A = \mathbb{C}[t]$, when L_1 and L_2 are simple $\mathfrak{g}[A]$-modules which are each given by the tensor product of two evaluation modules. (Received January 02, 2016)