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Dan Zacharia* (zacaria@syr.edu), Department of Mathematics, Syracuse University, Syracuse, NY 13244, and **Edward Green** and **Nicole Snashall**. *The extended degree zero subalgebra of the ext algebra of a linear module*. Preliminary report.

I will talk on joint work with Ed Green and Nicole Snashall. Let \mathbb{k} be a field and let R be a Koszul \mathbb{k} -algebra. Let M be a linear \mathbb{k} -module and let Γ be the ext-algebra of M . View Γ as a bigraded algebra with the bigrading induced by the homological degree and by the internal grading of M , that is

$$\Gamma = \text{Ext}_R^*(M, M) = \bigoplus_{n \geq 0} \bigoplus_{i \in \mathbb{Z}} \text{Ext}_R^n(M, M)_i.$$

We consider next (for lack of a better name) *the extended degree zero subalgebra* Δ_M of Γ ,

$$\Delta_M = \bigoplus_{n \geq 0} \text{Ext}_R^n(M, M)_0$$

It turns out that the extended degree zero subalgebra can be used to obtain a characterization of the graded center of a Koszul algebra. I will also present some other applications of the ideas involved. (Received February 08, 2014)