1023-57-846 **Radmila Sazdanovic*** (radmila@gwu.edu), George Washington University, Department of Mathematics, 1922 F street NW (Old main 103), Washington, DC 20052, and **Milena Pabiniak** and **Jozef H Przytycki**. *Analyzing torsion in Khovanov-type graph cohomology over algebra* $Z[x]/(x^m)$.

Motivated by the interpretation of Hochschild homology as graph cohomology of polygons, we analyze $H^{1,(m-1)(v-2)+1}_{A_m}(G)$ for arbitrary graph G with v vertices and any algebra of truncated polynomials $A_m = Z[x]/(x^m)$. For algebra A_3 we give a complete description of $H^{1,2v-3}_{A_3}(G)$ using homology of appropriate cell complexes. As a corollary we get that for a graph G without triangles $tor(H^{1,2v-3}_{A_3}(G)) = tor(H_1(X_4)(G))$ where X_4 is a cell complex obtained from G by gluing 2-cells along squares. In particular, for any finite Abelian group there exist a simple graph G with $tor(H^{1,2v-3}_{A_3}(G))$ equal to this group. In order to obtain a better understanding of $H^{i,j}_{A_m}(G)$ we follow several lines of inquiry. First by computing $H^{1,(m-1)(v-2)+1}_{A_m}(G)$ and width of $H^1_{A_3}(G)$ for various families of graphs. Moreover, we are interested in $tor(H^{2,v-2}_{A_2}(G))$ and its relations to properties of graphs since we know that if graph contains even cycle then its homology contains Z_2. (Received September 22, 2006)