Gerstenhaber structure of a class of special biserial algebras

Andrea Solotar

(joint work with Van Nguyen, Joanna Meinel, Bregje Pauwels and Maria Julia Redondo)

For any integer $N \geq 1$, we consider a class of self-injective special biserial algebras A_N given by quiver and relations over a field k. We study the Gerstenhaber structure of its Hochschild cohomology ring $HH^*(A_N)$. This Hochschild cohomology ring is a finitely generated k-algebra, due to the results by Snashall and Taillefer. We employ their cohomology computations and Suárez-Álvarez's approach to compute all Gerstenhaber brackets of $HH^*(A_N)$. Furthermore, we study the Lie algebra structure of the degree-1 cohomology $HH^1(A_N)$ as embedded into a direct sum of Virasoro algebras and provide a decomposition of $HH^n(A_N)$ as a module over $HH^1(A_N)$.