1171-16-26   **Tolulope Oke***, Department of Mathematics & Statistics, Wake Forest University, Winston-Salem, NC 27109. *Hochschild cohomology of a family of quiver algebras.*

The theory of support varieties of modules over finite groups is a very useful invariant in studying modular representations of finite groups. This theory is well developed. N. Snashall and O. Solberg started using similar ideas to develop a general theory of support varieties for finite dimensional modules over finitely generated algebras using Hochschild cohomology. We will present a cup product formula on the Hochschild cohomology of a family of quiver algebras and use this formula to determine both the structure of Hochschild cohomology modulo nilpotents and the structure of Hochschild cohomology modulo the weak Gerstenhaber ideal of the family. We will present the implication of this result to the Snashall and Solberg's theory of support varieties over finitely generated algebras using Hochschild cohomology. (Received August 03, 2021)