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Following the pioneering work of Quillen in the 1970s, Carlson, Avrunin and Scott, Friedlander and Parshall, Jantzen, and others made much progress in the 1980s studying the cohomology and representation theory of finite groups and restricted Lie algebras by way of their associated cohomological support varieties. Later, many of these methods and results were generalized first to infinitesimal group schemes by Suslin, Friedlander, and Bendel, and then to arbitrary finite group schemes by Friedlander and Pevtsova.

In this talk I will discuss some results and conjectures concerning how some of the aforementioned methods and results can be generalized to restricted (and non-restricted) Lie superalgebras and to certain finite graded group schemes. This is joint work with Jonathan Kujawa. (Received September 08, 2015)