

ALGEBRA  
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*Cohomology and support varieties for Cartan Lie superalgebras*

Irfan Bagci  
University of Georgia

**Abstract:** V. Kac classified finite dimensional simple Lie superalgebras over the field of complex numbers in 1970s. They constitute several series and are divided into two types based on their even part: classical type and Cartan type. Lie superalgebras of Cartan type consists of four series  $W(n)$ ,  $S(n)$ ,  $S(n)$ , and  $H(n)$ . In this talk I will briefly introduce Cartan type Lie superalgebras and then I will show how explicitly one can compute cohomology and support varieties for  $W(n)$  and  $S(n)$ . I will also mention what we have for  $H(n)$  and present a new theorem on realizability of support varieties that holds both for classical and Cartan type Lie superalgebras. If I have time I am planning to present some open problems at the end of my talk. The results about  $W(n)$  represents joint work with Jonathan Kujawa and Daniel Nakano.

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