Xie, Wenjuan; Zhang, Yongzheng:
Second cohomology of the modular Lie superalgebra of Cartan type $K$.

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In the paper under review the authors compute the dimension of the second cohomology space with trivial coefficients for the modular contact Lie superalgebra $K(m,n,t)$ over algebraically closed fields of characteristic $p > 3$ in the case that it does not have any non-degenerate invariant bilinear form, i.e., if $n - m \not\equiv 5 \pmod{p}$. The remaining case was done previously by Y. Wang and the second author [Commun. Algebra 32, No. 10, 4117-4131 (2004; Zbl. 1084.17009)]. In this paper it was also shown that for finite-dimensional simple Lie superalgebras that do not have any non-degenerate invariant bilinear form, the second cohomology space with trivial coefficients is isomorphic to the first coadjoint cohomology space. This and computations similar to the case of modular Lie algebras of Cartan type by R. Farnsteiner [Algebras Groups Geom. 3, 431-455 (1986; Zbl. 0621.17012)] and [Can. J. Math. 39, No. 5, 1078-1106 (1987; Zbl. 0631.17005)] are used in the proof of the main result.