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Brian D. Boe*, Mathematics Department, University of Georgia, Athens, GA 30602, and
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modules in blocks of category \mathcal{O}_S* . Preliminary report.

We investigate infinite-dimensional representations L in blocks of the relative (parabolic) category \mathcal{O}_S for a complex simple Lie algebra, having the property that the cohomology of the nilradical with coefficients in L “looks like” the cohomology with coefficients in a finite-dimensional module, as in Kostant’s theorem. A complete classification of these “Kostant modules” in regular blocks for maximal parabolics in the simply laced types is given. A complete classification is also given in arbitrary (singular) blocks for Hermitian symmetric categories. (Received February 28, 2006)