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Kenyon J Platt* (platt@math.byu.edu), 310 TMCB, Department of Mathematics, Brigham Young University, Provo, UT 84602, and **Bobbe J Cooper**. *Nilpotent Orbit Theory and Infinitesimal Blocks of the Parabolic Category \mathcal{O}_S* . Preliminary report.

Let \mathfrak{g} be a simple Lie algebra over the complex numbers. In the early 1980's, A. Rocha-Caridi introduced the parabolic category \mathcal{O}_S of \mathfrak{g} -modules, which generalized the BGG category \mathcal{O} . Category \mathcal{O}_S decomposes into subcategories containing only finitely many simple \mathfrak{g} -modules, called *infinitesimal blocks* of \mathcal{O}_S . The classification of these infinitesimal blocks in terms of the cardinality of the indecomposable modules has been ongoing since 2001. In joint work with B. Cooper, I present a conjecture for the complete classification of the infinitesimal blocks of \mathcal{O}_S in terms of the nilpotent orbits of \mathfrak{g} . I will also present compelling evidence in favor of the conjecture. (Received February 12, 2010)