

# Classification of simple Harish-Chandra modules for basic classical map superalgebras (Joint with V. Futorny, e H. Rocha)

Lucas Henrique Calixto <sup>1</sup>

<sup>1</sup> UFMG

We obtain a classification of simple modules with finite weight multiplicities over basic classical map superalgebras. Any such module is parabolic induced from a simple cuspidal bounded module over a cuspidal map superalgebra. Further on, any simple cuspidal bounded module is isomorphic to an evaluation module. As an application, we obtain a classification of all simple Harish-Chandra modules for basic classical loop superalgebras. Extending these results to affine Kac-Moody Lie superalgebras obtained by adding the degree derivation, we construct a family of bounded simple modules of level zero, and conjecture that all bounded simple cuspidal modules belong to this family. Finally, we show that for affine Kac-Moody Lie superalgebras of type I the Kac induction functor reduces the classification of all simple bounded modules to the classification of the same class of modules over the even part, whose classification is claimed by Dimitrov and Grantcharov.