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Weight modules of affine Lie algebras

The problem of classifying irreducible weight modules with finite dimensional weight spaces over affine Lie algebras has been studied actively for the last 20 years. Notable results include the classification of integrable modules by V. Chari, the study of parabolically induced modules by V. Futorny, and the study of uniformly bounded modules by D. Britten and F. Lemire. Apart from partial classification results, two important classes of irreducible weight modules with finite dimensional weight spaces were singled out. Roughly speaking, these are the parabolically induced modules and the loop modules. Several authors made conjectures that would imply that these exhaust all irreducible weight modules with finite dimensional weight spaces. Dimitar Grantcharov and I recently proved a theorem which confirms these conjectures and as a result completes the classification. I will present the main ideas and results from this work.