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Integrable weight modules of $gl(\infty)$

I will present a theorem classifying the irreducible integrable weight modules with finite dimensional weight spaces over the Lie algebra $gl(\infty)$ consisting of finitary infinite matrices. Every such module belongs to one of the following three classes: highest weight modules, infinite symmetric powers of the natural representations, and modules which are not highest weight but whose weights are dominated by a single weight. For the modules in the new third class I will present different realizations and will provide explicit parametrization. I will define all necessary terms and will state the problem and the main result.