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Thin coverings of modules

In this talk we will discuss a method of constructing graded-simple modules from ungraded simple modules over graded algebras (associative or Lie). This method works both in finite-dimensional and infinite-dimensional quasifinite set-ups. The key ingredient in our construction is the action of a cyclotomic quantum torus on the module. We apply this method to get a description of irreducible representations for the twisted toroidal Lie algebras.

This is based on a joint work with Michael Lau.