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**Evgeny Mukhin\***, Department of Mathematical Sciences, IUPUI, 402 N. Blackford St., LD270, Indianapolis, IN 462023216. *Bethe ansatz for toroidal algebras.*

We describe the spectrum of integrable system associated with the quantum toroidal  $\mathfrak{gl}(1)$  using Bethe ansatz. Our approach allows to deduce the Bethe ansatz equations and the spectrum of the model solely from the representation theory. This is a report on a joint work with B. Feigin, M. Jimbo, and T. Miwa. (Received January 19, 2016)