

PS02

**The Space of Observables for Classical Integrable Systems
with Algebro-Geometric Method**

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Led by an analogous problem for the quantum Toda lattice, Nakayashiki and Smirnov studied the space of observables for a classical integrable system known as the Mumford system. They conjectured this space is generated, under the action of the Hamilton vector fields, by a finite dimensional vector space which can be interpreted as a cohomology of a certain variety. In this talk, we develop a similar problem for systems related to the Toda lattice and Lotka-Volterra lattice, where we see an unexpectedly difficult problem in algebraic geometry. (This is a joint work with Takao Yamazaki.)