Averaged equations of periodic Toda lattice under the effect of linear dashpot

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Abstract

In this talk, I will discuss the dynamics of periodic Toda lattice under the effect of linear dashpots. The periodic Toda lattice of N particles has N integrals of motion: the functions of coordinates and momenta which are constant along solution curves. When the dynamic of the system is affected by frictional forces caused by linear dashpots, these integrals are no more constants.

However, if the friction of dashpot is significantly large, the variations of these quantities are very slow.

I will present equations which describe these slow variations.