Title : The Integrals of Motion for the elliptic deformed W-algebra

Subtitle : An elliptic quantization of the KdV theory

By Takeo Kojima

Abstract :
We construct infinitely many commutative operators associated with the elliptic deformation of the W-algebra. The quantum version of the KdV theory is the CFT (conformal field theory) governed by the W-algebra. This CFT has infinitely many commutative operators, which can be regarded as a quantization of the integrals of motion for the KdV [**BLZ**]. In this talk we construct elliptic deformation of this CFT. We construct infinitely many commutative operators associated with the elliptic deformation of the W-algebra $W_{q,t}(\widehat{sl_N})$ [**KS**]. In addition, we discuss the level parameter generalization of the commutative operators, which are governed by a parameter extension of the deformed W-algebra [**K**].

Refernces

[**BLZ**] Bazhanov V., Lukyanov S.and Zamolodchikov Al., Integrable structure of conformal field theory :quantum KdV theory and thermodynamic Bethe ansatz, *Commun.Math.Phys.***177**, 381-398, (1996).
[**KS**]T.Kojima and J.Shiraishi : The Integrals of Motion for the Deformed W-Algebra $W_{q,t}(\widehat{sl_N})$.II.Proof of the Commutation Relations, *Commun.Math.Phys.***283**, 795-851, (2008).
[**K**]T.Kojima : Wakimoto realization for the elliptic quantum group $U_{q,p}(\widehat{sl}_N)$, to appear in Int.J.Mod.Phys.**A**, [nlin.SI.0902.1022].