Wang, Gehao
From Kontsevich-Witten to linear Hodge integrals via Virasoro operators. (English)

Summary: We give a proof of Alexandrov’s conjecture on a formula connecting the Kontsevich-Witten and Hodge tau-functions using only the Virasoro operators. This formula has been confirmed up to an unknown constant factor. In this paper, we show that this factor is indeed equal to one by investigating series expansions for the Lambert W function on different points.

©2018 American Institute of Physics

MSC:
37K30 Relations of infinite-dimensional Hamiltonian and Lagrangian dynamical systems with infinite-dimensional Lie algebras and other algebraic structures
37K20 Relations of infinite-dimensional Hamiltonian and Lagrangian dynamical systems with algebraic geometry, complex analysis, and special functions
81R10 Infinite-dimensional groups and algebras motivated by physics, including Virasoro, Kac-Moody, W-algebras and other current algebras and their representations
37K10 Completely integrable infinite-dimensional Hamiltonian and Lagrangian systems, integration methods, integrability tests, integrable hierarchies (KdV, KP, Toda, etc.)
35Q55 NLS equations (nonlinear Schrödinger equations)
14C30 Transcendental methods, Hodge theory (algebrao-geometric aspects)
17B68 Virasoro and related algebras
41A58 Series expansions (e.g., Taylor, Lidstone series, but not Fourier series)

Keywords:
Alexandrov’s conjecture; Kontsevich-Witten-Hodge tau-functions

Full Text: DOI arXiv

References:

© 2023 FIZ Karlsruhe GmbH


18. Wang, G., A connection between the Kontsevich-Witten and Brezin-Gross-Witten tau-functions

This reference list is based on information provided by the publisher or from digital mathematics libraries. Its items are heuristically matched to zbMATH identifiers and may contain data conversion errors. It attempts to reflect the references listed in the original paper as accurately as possible without claiming the completeness or perfect precision of the matching.