2020年度 研究活動報告

Articles

M. A. Guest, A. R. Its, and C.-S. Lin, Isomonodromy aspects of the tt* equations of Cecotti and Vafa III. Iwasawa factorization and asymptotics, Commun. Math. Phys., 374 (2020) 923-973

M. A. Guest, Topological-antitopological fusion and the quantum cohomology of Grassmannians. Jpn. J. Math. 16 (2021) 155–183

Principal talks

(None)

International conferences co-organized

International Workshop on Geometric Evolution Equations and Related Fields, OCAMI, Osaka City University, 2021/3

Research summary

I am studying Lie-theoretic and symplectic properties of moduli spaces of solutions of the tt*-Toda equations. This a nonlinear p.d.e. which is important in geometry (harmonic maps) and supersymmetric quantum field theory (quantum cohomology). In joint work with Nan-Kuo Ho (National Tsing-Hua University, Taiwan) I have computed the Stokes data of the global solutions of the tt*-Toda equations in Lie-theoretic terms. In joint work with Alexander Its (Indiana University Purdue University Indianapolis. USA) and Chang-Shou Lin (National Taiwan University, Taiwan) I have obtained complete asymptotic data and connection formulas for these global solutions. Recently I have found applications of this work to the Satake Correspondence for the quantum cohomology of Grassmannians, and also to the Gaiotto Conjecture in SUSY field theory.