BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

SOLVING FOR TOPOLOGICAL STRING PARTITION FUNCTIONS GENUS BY GENUS IN TERMS OF MODULAR FORMS

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Nov 26, 2013, 2:00 – 3:00pm
Math/Computer Science, Room 148
111 Cummington Street, Boston

Tea: 1:45pm in Room 144

Abstract: : In this talk I will explain how to solve for the topological string partition functions genus by genus in terms of modular forms from the BCOV holomorphic anomaly equations, for certain special non-compact CY 3-fold families (B model). These partition functions are essentially identical to the generating functions of Gromov-Witten invariants of the mirror families (A model) by the mirror symmetry conjecture.

The moduli spaces of complex structures of the aforementioned CY 3-folds can be identified with modular curves. This identification allows to explore some arithmetic properties of the moduli spaces, and to solve the holomorphic anomaly equations by making use of polynomial recursion and some elementary facts from modular form theory. I will discuss in detail how this approach works for the mirror family (B model) of the local P2 family (A model).

This is joint work with M. Alim, E. Scheidegger and S-T Yau.

See `http://math.bu.edu/research/geom/seminar.html` or contact Si Li *sili@math.bu.edu* for more information.