Departments of Mathematics and Physics
University of Utah

STRING GEOMETRY SEMINAR

Symplectic loop spaces and genus zero Gromov–Witten theory

Yuan-Pin Lee

Department of Mathematics, University of Utah

To make this talk suitable for a string geometry seminar, I will start by explaining, very briefly, how Feynman integrals in topological sigma models are reduced to integrals over moduli spaces of holomorphic maps. With this backdrop, the traditional formulation of quantum cohomology, i.e. genus zero Gromov–Witten theory, in terms of moduli spaces of stable maps will be reviewed. The main focus of this talk is to explain how one can reformulate quantum cohomology in terms of some sort of enriched classical field theory, a.k.a. Givental's theory. This new formulation calls for Lagrangian cones in infinite dimensional symplectic loop spaces, with properties of "semi-infinite variation of Hodge structures". I will then show that two formulations are equivalent. This will pave the way for the next talk.

Thursday, September 18, 2003

3:00 PM — LCB 323