BOSTON UNIVERSITY GEOMETRY SEMINAR

NOTE: SPECIAL DATE!

QUANTUM GEOMETRY ON CALABI-YAU MANIFOLDS

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January 19, 2012, 4:00 – 5:00pm
Math/Computer Science, Room 148
111 Cummington Street, Boston

Abstract: I'll discuss some mathematical aspects of quantum geometry motivated from string theory. Starting from basic ideas in quantum field theory, I'll discuss the quantization problem on Calabi-Yau manifolds arising from topological string and mirror symmetry. The mirror symmetry conjectures that the quantization of moduli space of complex structures on Calabi-Yau manifolds is geometrically equivalent to the curve counting of arbitrary genus on the mirror Calabi-Yau known as Gromov-Witten theory. Although Gromov-Witten theory has been established at all genera, the mathematical knowledge of mirror symmetry on compact Calabi-Yau has been long limited to the genus zero case due to the absence of rigorous theory for quantization of complex structures. I'll explain an approach to higher genus theory from perturbative renormalization of Kodaira-Spencer gauge theory, and discuss an extension to include vector bundles.

See `http://math.bu.edu/research/geom/seminar.html` or contact Takashi Kimura *kimura@math.bu.edu* for more information.