BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

TRANSGRESSION TO LOOP SPACE AND FUSION

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Apr 30, 2014, 4:00 – 5:00pm
Math/Computer Science, Room148
111 Cummington Street, Boston

Tea: 3:45pm in Room MCS 144

Abstract: In the theory of loop spaces, an interesting question is how to characterize geometric objects (say, functions and line bundles) on the loop space of a manifold which are related by transgression to objects one topological degree higher (say, line bundles and gerbes respectively) on the manifold itself. The property of 'fusion', first introduced by Stolz and Teichner and further developed by Waldorf, plays a key role.

While there are known results for low topological degree making use of fusion and various equivariance conditions, these become increasingly difficult to extend to higher degrees. I will present a joint result with Richard Melrose which solves the problem at the level of Cech cohomology in all degrees. Specifically, we produce a refinement of Cech cohomology for the continuous loop space in terms of fusion and a second 'figure-of-eight' condition, through which transgression from the cohomology of the base factors as an isomorphism.

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