BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

CONSTRUCTION OF A FUNCTORIAL QFT IN THE RIEMANNIAN SETTING

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Jan 22, 2014, 4:00 – 5:00pm
Math/Computer Science, Room148
111 Cummington Street, Boston

Tea: 3:45pm in Room MCS 144

Abstract: A d-dimensional Riemannian Functorial Quantum Field Theory E associates to a closed oriented Riemannian manifold Y of dimension $d-1$ a Hilbert space $E(Y)$ and to a bordism Σ from Y_1 to Y_2 (which is a compact oriented Riemannian manifold with boundary $Y_2 \sqcup \bar{Y_1}$) a Hilbert-Schmidt operator $E(Y_1) \to E(Y_2)$ so that gluing bordisms corresponds to composing the associated operators. If we forget the Riemannian structure on the $Y's$ and on the bordisms, there are many examples of such theories which are known as Topological Quantum Field Theories. In 2007, Douglas Pickrell constructed a family of examples of 2-dimensional Riemannian Functorial Quantum Field Theories. In this talk, we construct an example when d is even.

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