

1125-57-1186

Jeff Cheeger* (cheeger@cims.nyu.edu), 251 Mercer St., New York, NY 10012. *L-classes: Is there a computable local combinatorial formula?* Preliminary report.

The issue of obtaining a computable local combinatorial formula for the L -classes of a triangulated manifold has been of interest since the 1960's, or perhaps even earlier. For instance, one (unsuccessful) attempt in the late 1960's to derive such a formula gave rise to Chern-Simons invariants. In the early 1980's, the author gave a local formula for the L -classes of a triangulated manifold equipped with a piecewise flat metric. The formula is in terms of η -invariants of links. It gives rise to a local combinatorial formula when one chooses the metric for which all of the simplices are regular. While the formula does not involve any arbitrary choices, it has the disadvantage that in general, η -invariants are difficult to compute. We will indicate a current project aimed at gaining some further understanding of the relevant η -invariants. (Received September 15, 2016)