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String structures

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String structures are a higher analog of spin structures. In fact, a string structure on a finite-dimensional manifold induces a "spin structure" on the free loop space of the manifold. I will explain this fact, and we will see how they naturally arise when quantizing two-dimensional sigma models. Topologically, a string structure is a trivialization of a degree 4 characteristic class; trivializations in differential cohomology theories (e.g. Cheeger-Simons characters or Deligne cohomology) give useful geometric models for string structures.

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