1067-58-953   **Corbett Redden*** (`redden@math.msu.edu`), A-318 Wells Hall, Department of Mathematics, Michigan State University, East Lansing, MI 48824. *String structures and loop spaces.* Preliminary report.

A string structure on a principal $Spin(k)$-bundle P is a lift of the structure group to $String(k)$, a group which is a 3-connected cover of $Spin(k)$. A string structure on P give rise to a "spin structure" on the free loop bundle LP; it lifts the structure group of LP to the universal central extension of $LSpin(k)$.

In this talk we analyze a concrete model of $String(k)$ and explicitly show how string structures on P transgress to desired structures on LP. We also note the relationship between various definitions of string structures and the advantages of working on P as opposed to LP. (Received September 16, 2010)