1048-51-33   **James S. Cook*** (`jcook4@liberty.edu`), 1971 University Blvd., Department of Mathematics, Lynchburg, VA 24502, and **Ronald O. Fulp**. *On Sections and Curvature for Super Yang-Mills Theory.* Preliminary report.

In physics, Super Yang-Mill's Theory is expressed in terms of local coordinate dependent expressions on superspace. We show how the classical constructions of Lichernowicz extend to the G^∞ super context. When the curvature is restricted to leaves of a certain foliation it is shown to be trivial. However, the curvature is nontrivial in other directions. The Bianchi identities have solutions which are used to construct the Lagrangian. Our goal is to show how the theory on the base superspace can be seen as a pull-back of a theory on a super bundle space. These results are derived over an infinite dimensional Banach manifold which possess a G^∞ supermanifold structure. (Received December 19, 2008)

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