1046-53-267 **Sooran Kang*** (sooran@colorado.edu), 3000 Colorado Ave. #G227, Boulder, CO 80303. *Yang Mills functional on a deformed Heisenberg C^*-algebra.*

In this poster, we present Yang-Mills theory for a deformed Heisenberg C^*-algebra, the deformation quantization of Heisenberg manifold, $D^{c,\hbar}_{\mu\nu}$, first invented by Marc Rieffel, using the noncommutative geometrical method developed by Alain Connes. In particular, we will describe a Grassmannian connection and its curvature on a projective module Ξ over the noncommutative C^*-algebra, $D^{c,\hbar}_{\mu\nu}$, and produce a specific element R in this projective module that determines both a non-trivial Rieffel projection and the curvature of the corresponding Grassmannian connection. Also, we will introduce the notion of multiplication-type elements of $E^{c,\hbar}_{\mu\nu}$. In our main result, we use a multiplication type operator to construct a certain family of connections on the deformed Heisenberg C^*-algebra that give rise to critical points of the Yang-Mills functional. (Received August 24, 2008)